

The

CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXII

MARCH 1950

Number 3

● BUILDINGS

● HIGHWAYS

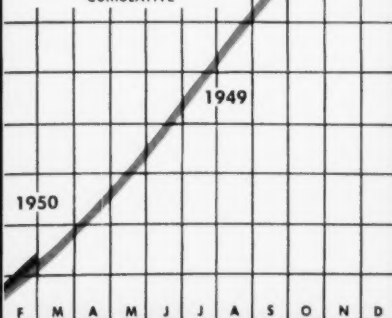
● AIRPORTS

● RAILROADS

PUBLIC WORKS



NEW CONSTRUCTION
(Billions of Dollars)
CUMULATIVE



Contracting Competition Keenest—Page 23

A.G.C. Annual Report —Page 42

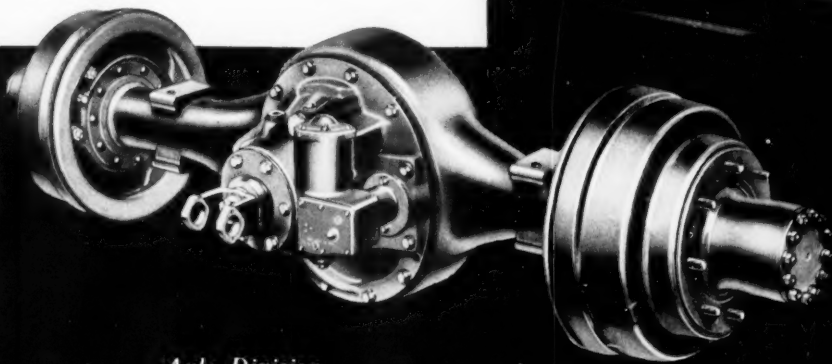
Pipeline Construction Booms —Page 29

EATON

2-Speed Truck

AXLES cut down Stress and Wear on Vital Truck Parts

Eaton 2-Speed Axles double the conventional number of gear ratios, enabling drivers to use the right gear ratio for every operating condition—starting out under full load, climbing grades, highballing, quick shifting in traffic. As a result, vital truck parts are not overstressed, engines are permitted to run at most efficient speeds, minimizing engine wear. Furthermore, Eaton Axles last longer, because planetary gearing better distributes gear-tooth loads, reducing stress and wear on the axle itself. Ask your truck dealer to explain how Eaton 2-Speed Axles more than pay for themselves.



Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO



PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRINGTITES • SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMIC DRIVES, BRAKES, DYNAMOMETERS



Ryerson Reinforcing Steels *Quickly from Stock*

Yes—reinforcing bars and accessories, spirals, wire mesh, expanded metal—all the steels needed for reinforced concrete construction are shipped in a hurry when you call your nearby Ryerson plant.

And for your convenience, Ryerson service on reinforcing bars covers every step from estimate to dependably scheduled deliveries. Ryerson furnishes you with setting plans when needed; accurately cuts and fabricates your steel, using only bars that conform to ASTM specification A305-49; identifies every piece for easy placement, with metal tags that can't be torn or defaced. In every step, close cooperation between the men who engineer, schedule and fabricate your job assures faithful execution of all requirements.

Moreover, the completeness of Ryerson stocks adds another convenience to Ryerson service. Not only reinforcing steels, but structurals, plates, bars,

sheets—everything in carbon, alloy and stainless steel awaits your order. So one source, your nearby Ryerson plant, can furnish everything needed for the biggest job. Still no job is too small to receive prompt personal attention. Call us for complete steel service.



Hi-Bond from Ryerson for Greatest Grip Meets and Exceeds New ASTM Spec. A305-49

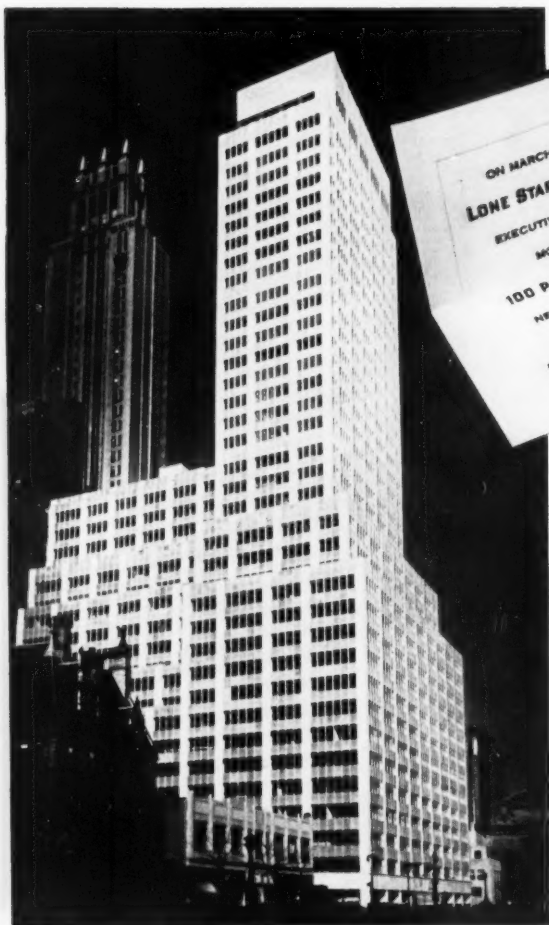
With Hi-Bond reinforcing bars, designers can take full advantage of the higher compressive strengths of modern concretes and the higher tensile strength of new steels. Write for new bulletin describing Ryerson service on this unique reinforcing bar, Ryerson Steel, Box 8000-A, Chicago 80, Illinois.



RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO

LONE STAR'S NEW HOME



EXECUTIVE OFFICES

CONSOLIDATED

ON 15th FLOOR

OF NEW YORK'S

NEW 36-STORY

SKYSCRAPER

- Lone Star Cement Corporation's executive and administrative offices will occupy the 15th floor in 100 PARK AVENUE, New York's new, 36-story skyscraper. This great building, almost next door to Grand Central Terminal, covers Park Avenue's westerly block-front between 40th and 41st Street, on the site of famous old Murray Hill Hotel, built in 1884, whose guests included many great figures of the day.

Quality Construction Throughout

A public which acclaims mass-production efficiency in the automotive and other industries, has only to consider projects like this to recognize comparable efficiency in construction today.

The GEORGE A. FULLER COMPANY completed this great structure three months ahead of schedule—not on a factory assembly line, but on a small island of ground space in a sea of heavy traffic. That this involved handling and accurate disposition of some eight million pieces or units, in hundreds of different shapes and materials, time-scheduled for arrival and placing, gives some idea of the size, scope and efficiency of the operation.

The use of 121,112 bags of Lone Star Cement in all concrete work typifies the quality of the construction—building-dollar value at its soundest and best.

Owner: 100 PARK AVENUE, INC.

Architects: KAHN & JACOBS

General Contractor: GEORGE A. FULLER COMPANY

Concrete Contractor: RIZZI CONSTRUCTION CO., INC.

Ready-mix Lone Star Concrete: JAMES A. NORTON, INC.

Lone Star Cement: GENERAL BUILDERS SUPPLY CORP.
all of New York City



LONE STAR CEMENTS COVER THE ENTIRE CONSTRUCTION FIELD

LONE STAR CEMENT CORPORATION

Offices: ALBANY • BETHLEHEM, PA. • BIRMINGHAM • BOSTON
CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS • JACKSON, MISS.
KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK
ST. LOUIS • PHILADELPHIA • WASHINGTON, D. C.

LONE STAR CEMENT WITH ITS SUBSIDIARIES IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS 15 MODERN MILLS 27,500,000 BARRELS ANNUAL CAPACITY

The CONSTRUCTOR

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RAILROADS • PUBLIC WORKS

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COVER

The CONSTRUCTOR's cover for March shows pipeline construction near Bassfield, Mississippi, by Wunderlich-Griffis Construction Co., A.G.C., Tulsa, Oklahoma. On the 112-mile stretch of Transcontinental Gas Transmission Co. pipeline in Mississippi covered by the contract, Wunderlich-Griffis laid more than a mile and a quarter of 30-inch steel pipe per day, in soft marshy soil where solid footing rarely existed. Pictured is one of the two Buckeye 51 ditchers powered by Caterpillar diesel D13000 engine which were used on the job. Photo was furnished by Caterpillar Tractor Co. This is one of the many pipeline jobs now under way in many sections of the country, described in the article starting on Page 29.

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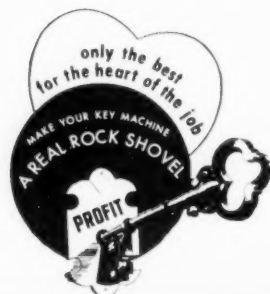
No other Truck Crane like this!

Here's a combination of advantages that puts the ordinary Truck Crane far ahead of the other operations; Uniform Pressure Controlled Boom Hoist, independent of all Clutches that take the jerks and swings out of swinging; the Northwest "Feather-Touch" Clutch Control that assures ease of operation without delicate complicated mechanism; Cast Steel Machinery Side Frames that maintain shaft alignment and reduce wear and tear; easy upkeep and plenty of power. These, plus the many other Northwest features proved in years of service assure smoother operation and higher output.

No other Crane Carrier like this!

The heavy duty carrier supplied with Northwest Truck Cranes is different! Designed by Northwest it brings you a box type frame braced and reinforced the full length as no other Truck Crane Carrier frame is braced. Improved design has resulted in the better distribution of loads over the frame. Outriggers extend the full width of the Carrier and have considerable more bearing support when extended. Better positioning of outriggers relieves the Carrier of a great amount of stress when crane is operating. The rear outrigger trunk is quickly demountable and makes easier conversion from Crane to Shovel, Dragline or Pull-shovel without repositioning the lower base. The Northwest Truck Crane is the greatest advancement in equipment of this kind yet offered the Contractor. We would like to tell you more about it. Don't buy a Truck Crane before you get full details on this outstanding piece of Northwest Equipment.

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135 South LaSalle Street
Chicago 3, Illinois



NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

31st annual convention of Associated General Contractors of America off to flying start in San Francisco as February ended and March came in. Emphasis again on nation's economy and on industry's best way to contribute to strong, economically healthy America. Division meetings discussed specific problems of various groups within the industry. Host chapters in California trotted out hospitality for which state is known. (Managing Director's Report on Page 12.)

Competition keenest in years, contractors from all over United States report in A.G.C. survey. Costs stabilized at 10 per cent below peak or tending to stabilize, according to answers from association's 110 chapters in United States and Alaska and its directors all over country. Comments on competition show general feeling condition is healthy, but some uneasiness, too. (Page 23.)

Federal-aid highway bill would increase authorization for this purpose; carries total of \$620,000,000. Interstate Highway System included *per se* for first time, with \$70,000,000 for this purpose. Bill does not meet American Association of State Highway Officials figures, but incorporates several A.A.S.H.O. suggestions. (Page 28.)

Middle income housing bill cut back sharply in Senate Banking and Currency Committee, largely because of Federal Reserve opinion measure as originally written was inflationary. Attempt to eliminate entirely direct federal aid to cooperative housing is defeated, however. Bill now faces still opposition in Senate and House (Page 28.)

Pipeline construction sets record in 1949; booming ahead now. Romantic names, startling figures tell story of this branch of industry which is building America day by day. Lines cover continent. (Page 29.)

Protective building against possible atomic attack may alter United States skylines, Atomic Energy Commission report indicates. (Page 25.)

11.5 billion dollar market seen in country's shortage of school facilities. Government agencies emphasize shortages, see need for as much school construction in this decade as there has been since 1924. Flock of bills pro-

pose federal aid for school construction similar to that for highways. American Parents Committee, other groups actively lobbying for such appropriations. (Page 33.)

President Truman backs legislation to proceed with Columbia River Basin work proposed jointly by Corps of Engineers and Bureau of Reclamation, but insists again valley authority is preferable way of handling matter. President also supports move for coordinated study of hydroelectric and other water problems in seven-state New York-New England area. Possibility of big heavy construction market seen. (Page 36.)

Accident prevention contest winners get more than 50 awards at A.G.C. convention. Number of firms completing contest year is up over previous year. A.G.C. emphasizes it is still possible to enter present contest year. (Page 38.) Construction industry accident record analyzed by Bureau of Labor Statistics in comprehensive report, which separates A.G.C. members, too. (Page 40.)

Joint cooperative committees of A.G.C. with Construction Industry Manufacturers Association, Associated Equipment Dealers and American Society of Civil Engineers hold meetings. Ideas sought for new equipment and on employment in industry. Manufacturers, dealers back contract method after discussion of force account work. (Page 70.)

A.G.C. chapters and branches continue to report elections of new officers for 1950. (Page 72.)

Atomic Energy Commission announces conducting contracting negotiations with Fluor Corp., Ltd., A.G.C., Los Angeles, California, for construction work on materials testing reactor to be built at Reactor Testing Station near Arco, Idaho. Commission says picked Fluor after consideration of 80 other general contractors. This is the second reactor scheduled for Arco.

Northeast Louisiana Contractors Association, Inc., Monroe, Louisiana, applies for charter as A.G.C.'s 111th chapter. Building contractors' unit is headed by A. B. McBride.

Home building activity in January sets another new high, Bureau of La-

bor Statistics reports, with 80,000 starts of nonfarm dwelling units. This was an increase of 1,000 units over December 1949, of 30,000 units over January 1949.

Advance planning loans for additional 102 localities from Public Housing Administration approved by President Truman. Will enable planning of 24,466 low-rent homes for more than 83,000 persons in low-income families, according to Public Housing Commissioner John Taylor Egan. Loans authorized total \$6,644,900. Will enable communities in 28 states and Puerto Rico to plan more than \$200,000,000 of public housing.

Personal income in December at annual rate of 211.5 billion dollars, about two billion higher than in previous month, Office of Business Economics, Department of Commerce, reports. For full 1949, personal income totaled 210 billions, slightly below 1948 record of 212 billions. November-December rise attributed to higher wages in durable goods manufacturing industries and larger corporate dividend payments. Was limited by decline in proprietors' incomes.

Public Roads Commissioner Thomas H. MacDonald one of 12 officials in Bureau of Public Roads honored by Secretary of Commerce Charles Sawyer for outstanding achievements in government service. Among others so honored was Dr. Laurence I. Hewes, chief of BPR's western headquarters in San Francisco, a speaker at A.G.C.'s 31st annual convention.

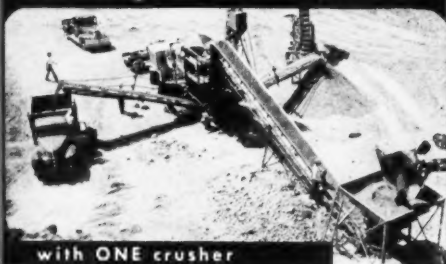
Veterans Administration's annual report shows completion of three new hospitals with 834 beds during 1949; 76 projects under way at end of fiscal year, of which 61 were new hospital projects and 15 were bed addition and conversion projects. One conversion reported in fiscal 1949. 183 non-bed facilities completed during year; 217 approved by President Truman for construction as of June 30, 1949.

Administration, Congress concentrate on foreign affairs and coal strike crisis as February ends. Next autumn's congressional campaign increasingly figures in jockeying between parties and within each major party. President Truman's unusual attack on working press seen as evidence of edginess within Administration.

You Name It! We HAVE IT!

Portable (and stationary) rock and gravel crushing, screening and washing plants for every requirement. High speed jaw and roll crushers, with matching conveyors and screens, combined as you want them in a plant that will give you "More Rock for Less Money."

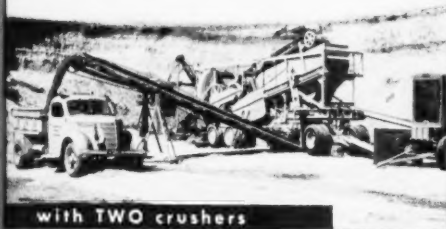
Single-Unit Plants



with ONE crusher



with TWO crushers



with TWO crushers

Multiple-Unit Plants



TWO units... TWO crushers



TWO units... THREE crushers



THREE units... FIVE crushers

Yes, whatever your particular production problem, you will find the answer in an Austin-Western plant. Our engineering department will gladly submit sketches and estimates.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U. S. A.

BUILDERS OF ROAD MACHINERY
Austin A Western
SINCE 1889

A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for February stands at Index Number 346, according to the A.G.C. Index. The cost figure for February 1949 was 339. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 464 for February. One year ago the average stood at 450. The average of prices paid by contractors for basic construction materials for February stands at In-

dex Number 267. The average a year ago stood at 266. The 1913 average, again, equals 100.

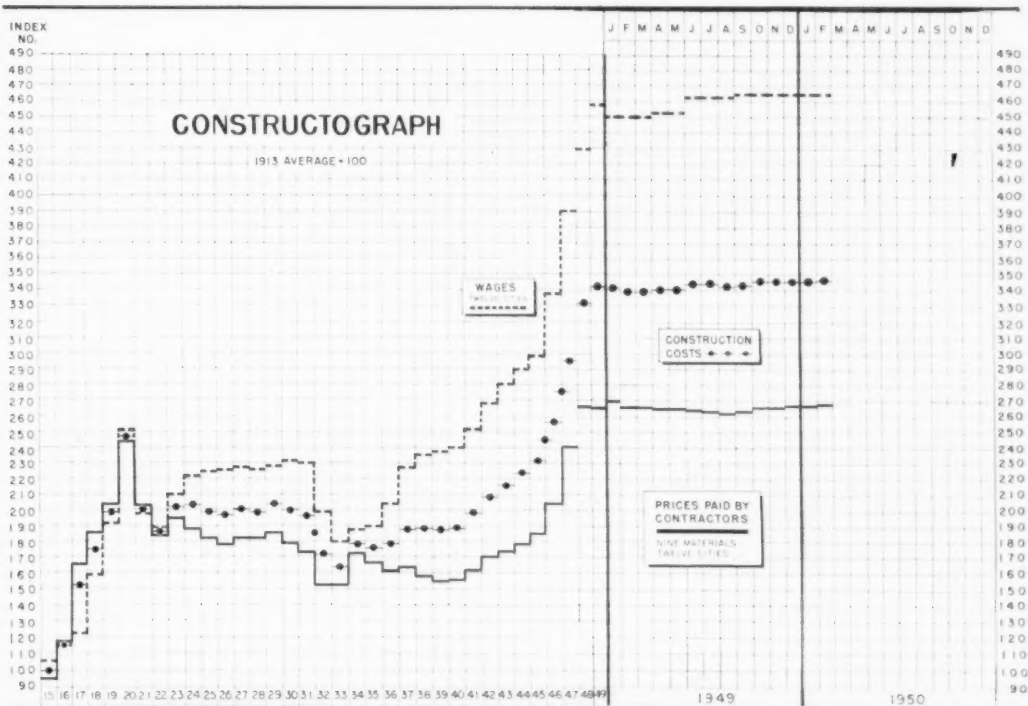
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during January (Index Number 160, based on 1936-1938) is a decrease of 44 points from December, and an increase of 53 points above January 1949.

REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 7 weeks of 1950 totaled 4,134,811 cars. For the same period in 1949, loadings amounted to 4,923,431 cars. This represents a decrease of 16 per cent.

● Wage, Material Price and Construction Cost Trends



Only Adams Motor Graders

give you this exclusive combination of advantages

1 8 Overlapping Forward Speeds

2 Wide Range of Blade Positions Without Mechanical Adjustments
... Save Time in Adapting Machine to Needed Cuts.

3 Positive-Action Mechanical Controls ... Dependable, Accurate Adjustments—Because They're Geared ... Easy, Natural Steering.

4 Ample Operating Clearances ... Quick, Easy Adaptation to Work ... Operator Comfort, Convenience, Efficiency.

5 Fast, Easy Servicing Plus World-Wide Dealer Service
... Saves Time and Money.

4 Average-Work Speeds

for Ditching, Scarifying, Bank Work, Oil Mixing, Spreading, Maintenance, etc.

2 Intermediate Speeds

for Climbing Heavy Grades and for Plowing, Blading and Bucking Snow.

2 Transport Speeds

In Adams Motor Graders you get 2 more forward speeds than in several machines of comparable size and power—8 speeds instead of 6. These additional 2 speeds give you an extra working speed and a higher "high"—as much as 25 mph. You get an exactly *right* speed for accomplishing each grading operation at the fastest practical rate ... plus 30 to 50% faster job-to-job transport.

Let your local dealer show you how 8 forward speeds and other Adams advantages help you to speed operations, increase efficiency, reduce costs.

J. D. ADAMS MANUFACTURING CO.
INDIANAPOLIS, IND.

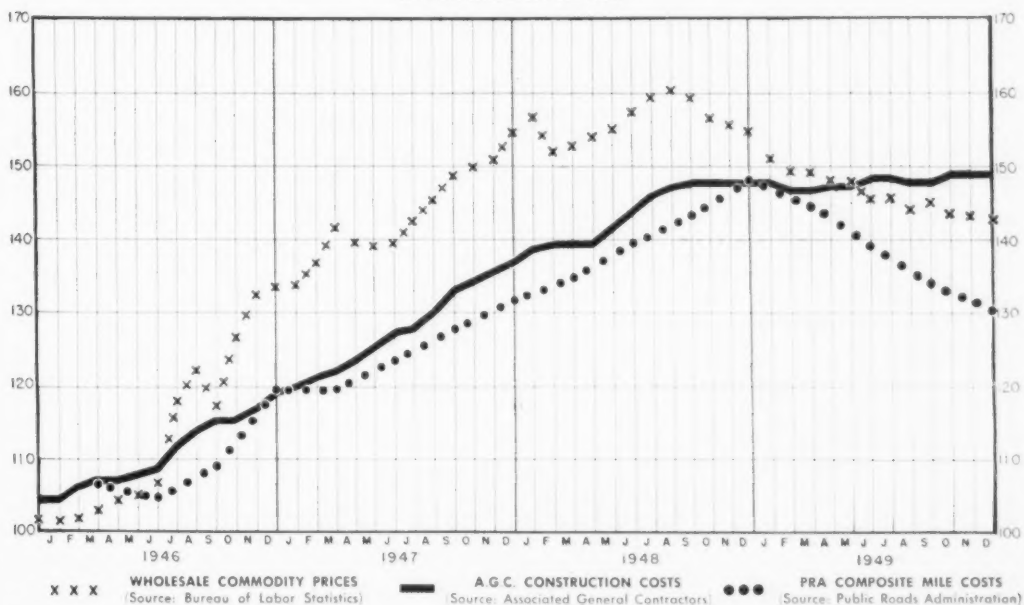


*Make your next
motor grader an*

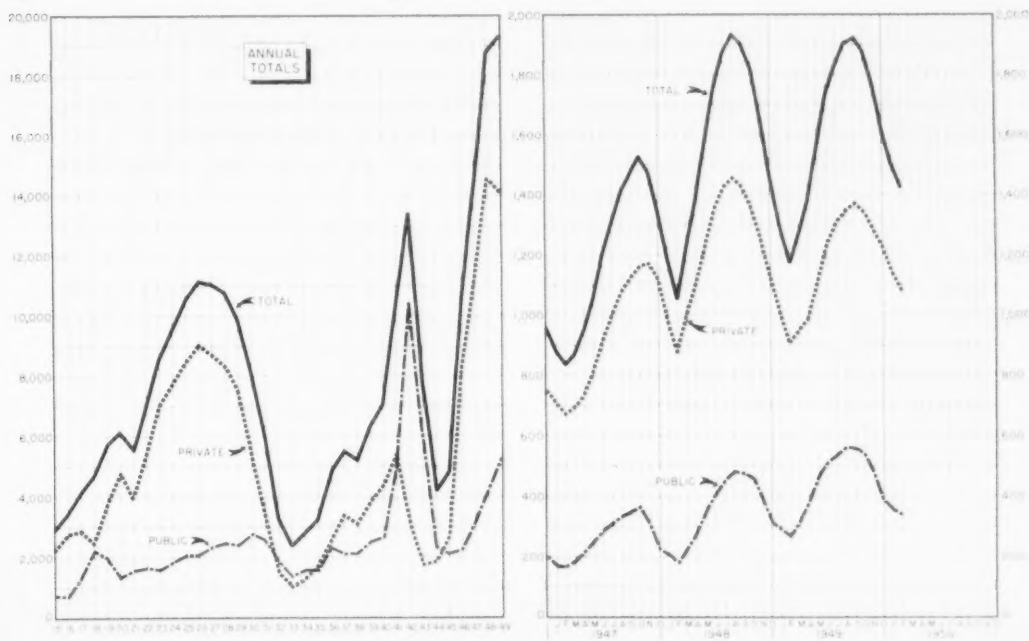
ADAMS

● **Postwar Comparison: CONSTRUCTION COSTS VS. WHOLESALE COMMODITY PRICES**

1945 AVERAGE = 100 PER CENT



● **New Construction Activity (MILLIONS OF DOLLARS)**





GM Series 71 Diesels power a fleet of 50 Euclid bottom-dumps working for S. A. Healy Co. on construction of 200-ft. high Neversink Dam.

Good Diesels keep good company

Today the list of contractors who operate equipment powered by General Motors Series 71 Diesels reads like a "Who's Who" of the industry.

Big operators like S. A. Healy Co., who have the \$25 million contract for New York City Board of Water Supply's half-mile dam across Neversink River Valley, have found what these powerful, efficient Diesels can do.

These modern 2-cycle Diesel engines pack more power in less space—they do their work easily and fast. With power at every downstroke, they deliver high

torque that gives them quick get-away and smooth, steady up-grade pull even with a punishing load.

At the same time, these engines are clean in design, easy and economical to service. There's no high-pressure fuel tubing. Injector, pump and fuel-metering mechanism for each cylinder are all in single, easily changed units.

Any machine with GM Diesel power is a better machine—sturdy, dependable, economical. So whatever equipment you buy, it will pay you to specify a GM Diesel engine.

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SINGLE ENGINES... Up to 700 H.P. DETROIT 26, MICHIGAN MULTIPLE UNITS... Up to 800 H.P.

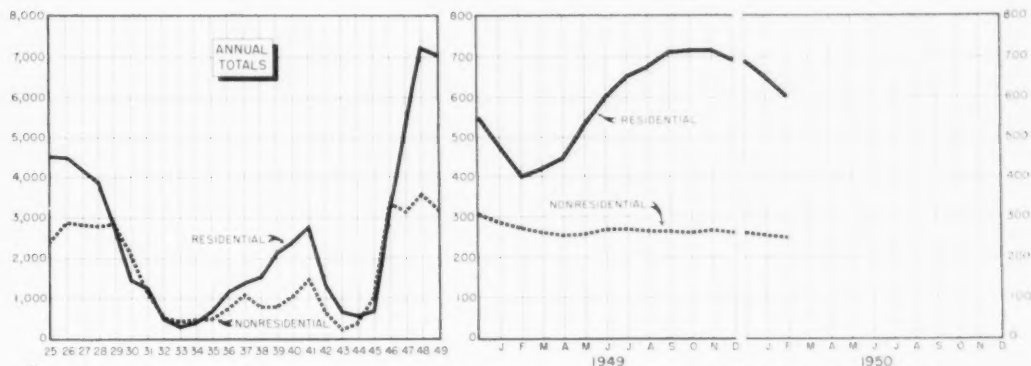
GENERAL MOTORS

DIESEL BRAVN WITHOUT THE BULK



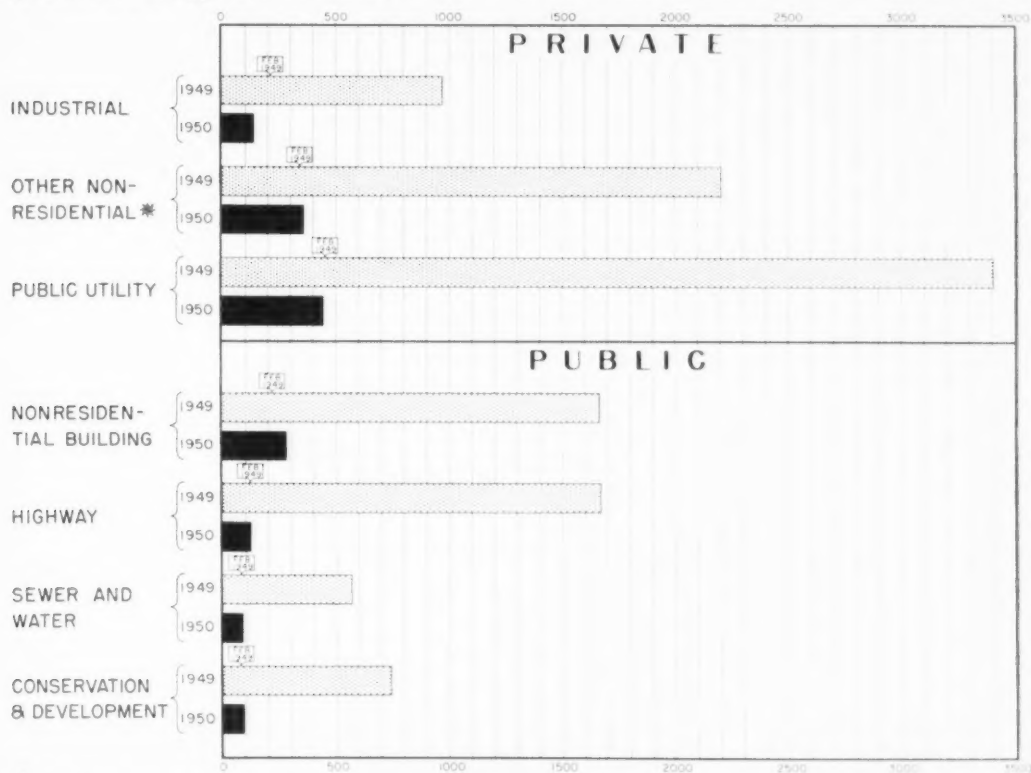
NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building* (MILLIONS OF DOLLARS)

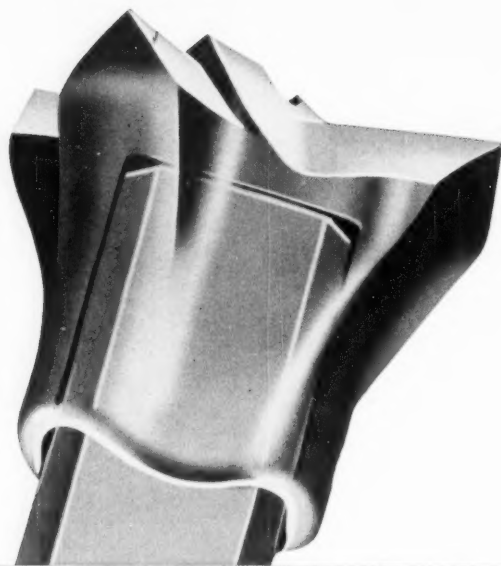


* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building

● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1949 and 1950 VOLUME THROUGH FEBRUARY

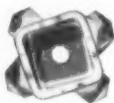


* includes commercial, institutional, and social and recreational building



New TIMKEN® one-use rock bit with new "Spirallock" union offers 7 great advantages

1 STAYS ON MORE DEPENDABLY. New "Spirallock" union*—formed by square socket that spirals slightly as it recedes—has proved superior under actual on-the-job conditions.



2 EASIER TO GET ON AND OFF. A few blows of the drill and it's on. A few blows of a hammer and it's off. Smooth socket contours assure easy detachability.

3 MADE OF TIMKEN ELECTRIC FURNACE STEEL. Fast cutting. Long lasting. Uniform quality.

4 NON-RIFLING. The "X" cutting edge prevents rifling in any ground.

5 CROWNED CHISEL PILOT. Makes for easier starting and "collaring"—faster penetration.

6 SIMPLIFIES PREPARATION OF DRILL STEELS. Due to "Spirallock" union, steels last much longer, are easier to prepare and recondition. Square steel ends simplify fitting. They may be machined or forged.

7 ANY STEELS CAN BE USED. Existing drill steels of any size and section can be adapted quickly and easily.

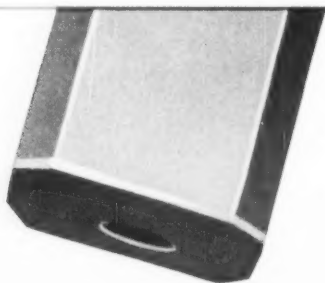
THE superiority of the new Timken® one-use "Spirallock" rock bit has been proved under actual on-the-job conditions. It offers advantages no other one-use bit can equal.

This revolutionary bit is designed for jobs where bit reconditioning is impractical or undesirable. It is available in a variety of types and sizes.

To get the best bit for your job, use our Rock Bit Engineering Service. Timken and Timken *alone* offers *all three* types of bits—the famous threaded multi-use and threaded carbide insert bits as well as the new one-use "Spirallock" bit. And Timken has been solving rock bit problems for 17 years.

Write to The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

*PATENT PENDING



TIMKEN

YOUR BEST BET FOR THE BEST BIT
... FOR EVERY JOB



1 Timken threaded multi-use rock bit.



2 Timken threaded carbide insert rock bit.

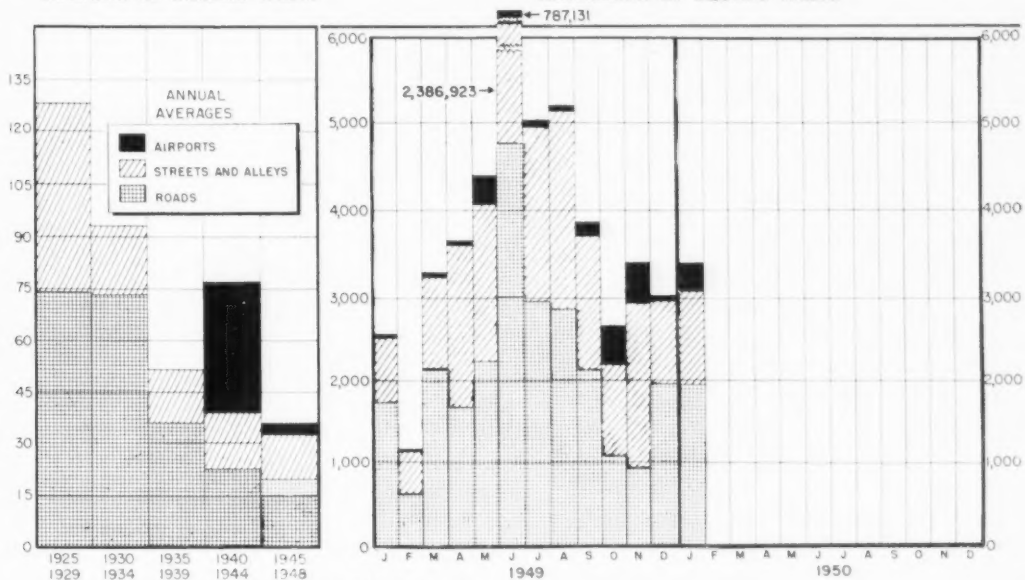


3 Timken one-use "Spirallock" rock bit.

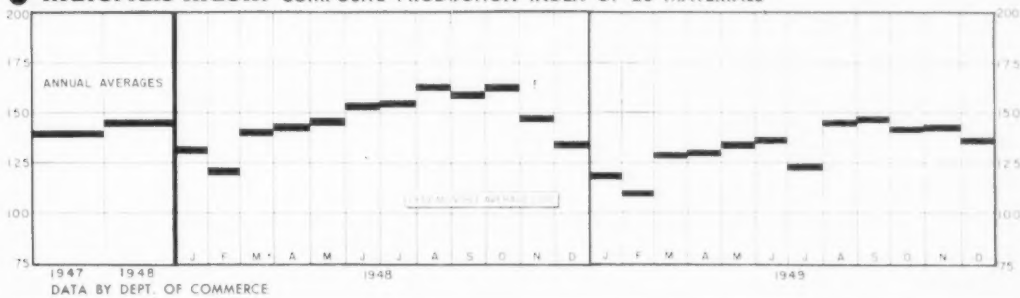
Concrete Surface Pavement Awards

MILLIONS OF SQUARE YARDS

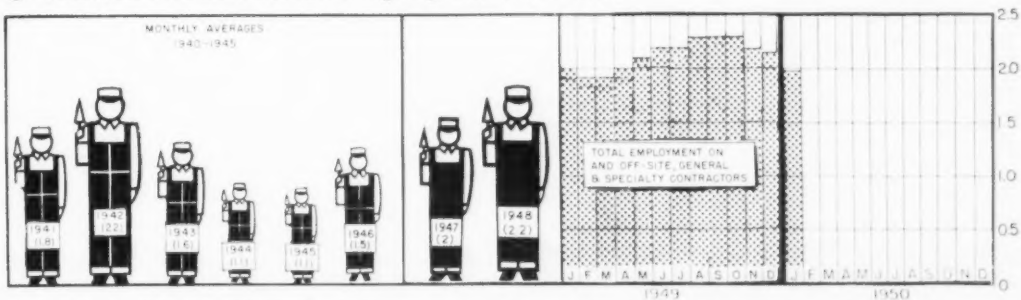
THOUSANDS OF SQUARE YARDS



Materials Index: COMPOSITE PRODUCTION INDEX OF 20 MATERIALS



Contract Construction Employment (MILLIONS)



**"I tried
them
all on
rip cuts
and I'll
take
SKIL
Saw"**



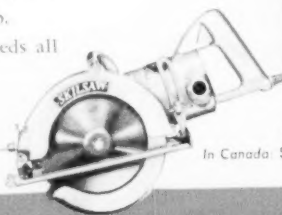
"SKIL Saw keeps going where going is toughest"

It takes a good, tough saw to stand the gaff on rip-sawing. That's one reason carpenters everywhere prefer hi-torque, powerful SKIL Saws. SKIL Saws keep going where others bind and stall. SKIL Saws withstand the roughest use because of extra strong gears. SKIL Saws stay out of the shop, stay on the job.

Try SKIL Saw yourself. See how it speeds all kinds of sawing. Feel how perfect balance

and scientifically placed handles for *both* hands make it easier to handle. Try SKIL Saws today. Ask your SKIL Tools Distributor for a demonstration.

SKIL Tools are made only by **SKILSAW, INC.**
5033 Elston Ave. Chicago 30, Ill.



SKIL ELECTRIC **Tools** PNEUMATIC

Factory Branches in Principal Cities
In Canada: SKILTOOLS, LTD., 66 Portland St., Toronto, Ont.

For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

This table indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from November 15, 1947, to January 15, 1950.

They are presented here for use by employers who may wish to take these cost of living data into consideration when considering adjustments of wages based on increased living costs.

The Bureau of Labor Statistics surveys 10 key cities every month and 24 other large cities quarterly. Prices are obtained on food, fuel, apparel, house furnishings and miscellaneous goods and services. Rental information is obtained quarterly only for all cities. The computations are based on the indexes for the years 1935-39, which are taken as the average of 100 points.

	1947		1948	1948		1949	1949		1950
	NOV. 15	DEC. 15	JAN. 15	NOV. 15	DEC. 15	JAN. 15	NOV. 15	DEC. 15	JAN. 15
Average	164.9	167.0	168.8	172.2	171.4	170.9	168.6	167.5	166.9
Birmingham, Ala.	171.6	173.8	174.4	175.0	174.8		170.5	168.4	166.9
Mobile, Ala.		170.3			173.5	173.7		167.4	
Los Angeles, Calif.	164.1	166.0	167.6	172.2	172.7	172.7	166.6	165.4	166.9
San Francisco, Calif.		168.9			176.7			171.5	
Denver, Colo.			167.0			171.0			164.5
Washington, D. C.	161.7			167.1			166.2		
Jacksonville, Fla.		173.9			176.2			175.5	
Atlanta, Ga.	167.5			173.7			170.5		
Savannah, Ga.			175.6			176.7			169.1
Chicago, Ill.	168.3	170.1	171.5	175.9	175.4	174.9	175.3	173.2	172.8
Indianapolis, Ind.			172.3			173.6			170.6
New Orleans, La.	173.2			176.6			173.3		
Portland, Maine		162.0			167.1			162.8	
Baltimore, Md.		171.3			174.0			170.9	
Boston, Mass.	158.3	160.4	163.1	166.7	164.7	163.9	164.0	162.7	161.5
Detroit, Mich.	166.6	169.0	170.6	173.1	172.8	171.6	169.8	169.1	168.5
Minneapolis, Minn.		166.2			170.8			167.4	
Kansas City, Mo.			162.4			165.1			160.6
St. Louis, Mo.		167.9			171.1			167.8	
Manchester, N. H.			172.5			172.3			167.1
Buffalo, N. Y.			167.4			169.8			164.8
New York, N. Y.	163.3	164.9	167.1	171.0	169.2	169.2	165.8	164.9	163.7
Cincinnati, Ohio	167.1	170.3	171.2	173.8	172.2	172.0	168.3	167.8	167.7
Cleveland, Ohio	166.9			176.2			170.3		
Portland, Ore.			174.4			178.6			173.8
Philadelphia, Pa.	164.2	166.3	168.4	171.7	170.6	170.4	168.6	167.3	165.9
Pittsburgh, Pa.	168.1	170.2	172.3	175.9	174.9	174.6	171.3	170.3	169.9
Seranton, Pa.	165.2			169.4			166.3		
Memphis, Tenn.		173.5			174.3			170.8	
Houston, Texas	165.8	169.3	170.8	173.9	173.8	172.6	173.3	173.2	172.8
Norfolk, Va.	168.2			174.0			168.2		
Richmond, Va.			165.1			166.5			161.8
Seattle, Wash.	166.2			174.3			171.6		
Milwaukee, Wis.	164.0			171.2			168.4		

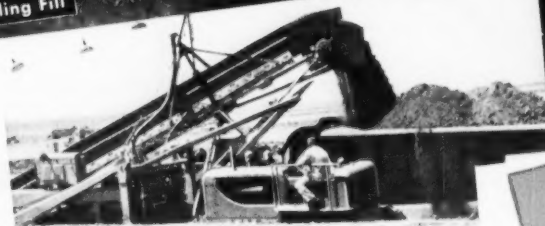
55 Allis-Chalmers Tractors and Motor Graders

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42 HD-19 Hydraulic Torque Converter Tractors



Leveling Fill



Pushing Loader



Boosting Haul Wagon



Pulling Tamping Rollers

12 Model AD Motor Graders



Maintaining Haul Road



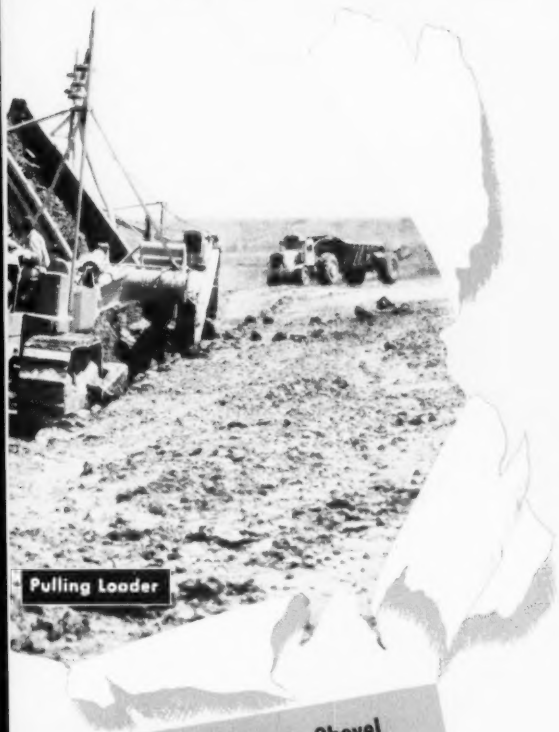
Sloping Bank

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Earth Fill Dam.



Pulling Loader

Model HD-5 and Tracto-Shovel



Loading Oversize Rock

Fleets of A-C's have set a terrific pace since early in 1949 on this 20-hour-a-day, six-day-a-week job. Production during good weather hit 100,000 yards and more a day! YET DOWNTIME HAS BEEN MUCH LESS THAN THE CONTRACTORS ANTICIPATED—based on previous earth-moving experience.

This outstanding service record again demonstrates that A-C equipment is built to take it. Proves again that extra production time is gained through such advantages as simplified adjustments and repairs . . . electric starting . . . quick, easy removal of major assemblies . . . interchangeability of many GM engine parts on all makes and models of A-C diesel tractors and motor graders. PLUS extended lubricating periods — 1,000 hours on truck wheels, idlers and support rollers.

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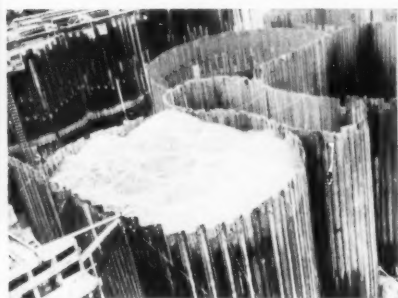
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PULL IT
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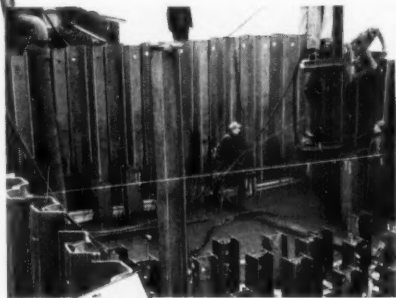


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Inland engineers have had broad experience in working with contractors. They are ready to assist you in design, layout and selection of proper material to cut construction costs and speed erection.

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Sidelights for Contractors

By John C. Hayes, Legal Adviser

Taxes

Interest on Deficiency.—Where a tax deficiency and interest thereon have been validly assessed, the Supreme Court has decided that a subsequent carry-back of a net operating loss abating the deficiency does not abate the interest previously assessed on the deficiency.

Accrual of Income.—Overruling a District Court decision in (Page 49, March 1949 *CONSTRUCTOR*) a Circuit Court of Appeals held that amounts withheld by a state highway commission from a construction company nevertheless accrued as income to the company in the year its contract work was completed and accepted, rather than in the subsequent year when the payment was made, after expiration of a statutory period of notice.

Personal Holding Company.—A Circuit Court of Appeals has ruled that penalties for failure to file personal holding company returns were improperly imposed against a corporation when the latter had requested a competent tax expert to prepare such corporate returns as were necessary and had furnished him all necessary information. To impute to the taxpayer the mistake of his consultant would be unreasonable, the court thought.

Social Security Taxes.—All corporate officers are not necessarily employees for Social Security tax purposes, a Circuit Court of Appeals states. The court ruled that three officers attending only to routine corporate organization matters, without compensation, should not be counted in determining whether or not the corporation had the minimum of eight employees for application of the unemployment tax.

Closing Agreements.—A recent Tax Court decision illustrates the desirability from the taxpayer's standpoint of having settled the tax consequences of an important transaction by enter-

ing into a closing agreement with the commissioner of internal revenue. In accordance with the terms of such an agreement, the court upheld the deduction by the taxpayer of accelerated amortization of facilities, although such amortization resulted in substantial tax savings due to the fact that the deductions exceeded the reimbursement payments which the taxpayer reported as income.

Accrual of Expenses.—The Tax Court has refused to allow a taxpayer on the accrual basis of accounting to deduct in 1942 additional charges paid in such year to a trucking firm for hauling services performed in 1939 and 1940, notwithstanding there had been a mutual mistake of fact in the earlier years as to the proper charges to be paid.

Short Sales of Stock.—The commissioner of internal revenue has issued a ruling that amounts equal to dividends paid by an investor with respect to stock borrowed to cover short sales, and also premiums paid by an investor in connection with the acquisition of such stock, are deductible as non-trade or non-business expenses under Section 23 (a) (2) of the Internal Revenue Code.

Contest Prizes.—In another published ruling, the commissioner takes the general position that, where an individual takes part in a radio quiz contest, complies with the conditions thereof, and as a result wins a prize, he derives taxable income to the extent of the fair market value of the prize on the date he acquires it.

Estate Tax.—While a gift by a father to a trust for his son of corporate stock was ineffectual to remove such stock from the father's estate when made in contemplation of death, a Circuit Court of Appeals held that income on such stock prior to the father's death should not likewise be included for estate tax valuation.

Public Contracts

Termination Claims.—The necessity of exhausting the administrative remedies provided under the Contract Settlement Act prior to instituting court action for damages for termination of war contracts has been re-emphasized. The Supreme Court has refused to review a lower court decision denying relief to a sub-contractor in a suit brought against a prime contractor prior to the sub-contractor's filing claim against the prime contractor on forms provided under the act. And a Court of Appeals has refused recovery to a prime contractor that brought suit against the government but had neglected to exhaust its administrative remedies.

Sub-Contractors' Claims.—A Circuit Court of Appeals has refused to permit recovery by a sub-contractor suing the Federal Public Housing Authority for payment due from the cost plus fixed fee contractor. While the entire cost came from the government under the lease contract, there was no contractual obligation between the latter and the sub-contractor under the sub-contractor's agreements solely with the cost plus contractor.

However, on the government's termination of a cost plus fixed fee contract in accord with a termination provision in the contract that the government assumed all obligations of the prime contractor, the Office of Contract Settlement Appeal Board ruled that, in accord with the Contract Settlement Act, the sub-contractors were third party creditor beneficiaries whose termination claims could be settled directly by the contracting officer.

Retroactive Wage Increase.—Where a cost plus contractor had an informal agreement with the government contracting agency that the contractor would be reimbursed for all expenses, the comptroller general ruled that the parties were entitled to have the confirmatory contract reformed or so regarded as to conform to their true intentions. The contractor was held to be entitled to reimbursement for a retroactive wage increase, although the confirmatory contract as executed did not include a provision therefor.



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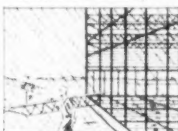
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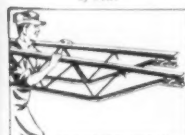
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because not dependent on setting concrete



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WIDELY USED in factories, office buildings, apartments, schools, hospitals and similar structures



ECONOMICAL through savings in supporting framework and foundations; speed of erection; insurance, maintenance.

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Truscon "O-T" Open Truss Steel

Joists offer the architect and builder an extremely modern instrument for rigid, fire resistant, economical and light weight floor construction. This unit is a Warren truss having top and bottom chords of wide tee-shaped members and a plain round continuous web member. The bottom chord is continuous from end to end of joist and bent up at the ends to form the bearings. These steel joists are fabricated by means of electric machine welding under pressure, making positive connections at all joints. Study the many advantages described above—then write for free illustrated literature on Truscon "O-T" Open Truss Steel Joists.



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Competition in the Industry

THE OUTSTANDING characteristic of the general contracting industry now appears to be the intense competition prevailing among general contractors.

This was emphasized repeatedly in responses to a survey conducted last month by The Associated General Contractors of America among its directors and 110 chapters and branches throughout the country.

The information was reported to the association's 31st annual convention which was held in San Francisco February 27 to March 2.

A larger number of replies was received to this questionnaire than from previous surveys among this group, and the details of the answers and tone of the letters indicated that much careful thinking was being done in the industry on the subject of costs and the possibility of securing new work without having to bid below cost.

For the most part, the contractors welcomed the keen competition as healthy for the industry and leading toward greater efficiency. It was pointed out frequently that owners were now getting the advantage of very low prices, and that lowered costs help to encourage more work to come on the market.

In some localities the competition was getting so intense that some of the contractors pointed out the danger to the industry when bids were driven so low that practically all jobs were being awarded for less than cost.

The competition seemed to prevail throughout the country, and for all types of work. The difference in the competition picture seemed to be one of varying intensity in various districts.

It was predicted that many general contracting organizations would be killed off by the terrific competition. It was felt that these would be principally smaller and younger firms which had not yet become stabilized, or those which had tried to maintain their war time expansion.

Practically all responses stated that there were increases in the efficiency of contractors' organizations, if for no reason other than that it was forced by the increasing competition.

While most reported that there was improvement in the productivity of workmen, a number pointed out that productivity increased most when there was the threat of unemployment in the area.

A number of responses suggested that the national legislative and economic trends would exert a stronger retarding influence on the volume of construction contract awards than construction costs themselves.

It was pointed out many times that owners awarding contracts now could take advantage of very favorable

prices, and that there was little likelihood of any substantial savings to be made by owners in delaying the award of contracts in the hope of securing more favorable prices in the future.

America Needs Schools

THERE IS a crying need for more schools in this country. There is a real feeling, in Washington and among many parents' organizations, that the federal government must help with this problem as it does, say, with the highway construction program.

The new emphasis on the necessity for construction of more schools, noted in the February *CONSTRUCTOR* and on Page 33 of this issue, is a matter of considerable importance to contractors, both as citizens and as business men.

The public school has rightly been called one of the real foundations of our democratic way of life. We take it for granted—although we do not always implement our ideas sufficiently as the evidence today shows—that an American child has a right to a good education; has a right to go to school in a modern, properly planned school.

There is, too, the very practical matter from the building contractor's point of view that this present unfilled need for school buildings represents a market which, by the best federal estimates, amounts to at least \$11,500,000,000 in actual construction. (This figure does not include land or equipment.)

Certainly, the industry will want to watch closely what is done in Washington and, more important, what is being planned at the community level in the matter of school construction.

Accident Prevention

IT IS A HEARTENING sign that the number of member firms of The Associated General Contractors which finished the accident prevention competition last year was up again over the number of the preceding year. (Page 38.)

Too much emphasis cannot be placed on this type of work. As government figures show (Page 40), there still are far too many accidents in the construction industry. It is a field in which, as *THE CONSTRUCTOR* noted in January, there is a real danger of government intervention unless the industry puts its own house in order.

Contractors will do well to talk safety, think safety, practice accident prevention at all times.

Fabricators and Erectors of *Structural Steel*

• Statistics show the steel industry has facilities to fabricate and erect over two million tons of steel in 1949. America finds Allied ready with three fully equipped plants, operating under unified control, with abundant capacity to tackle a big share of the job. Here expert crews fabricate and erect bridges and buildings from the blueprint stage to finished structures. We invite you to consult Allied on any structural job that's pending . . . large or small. Send us your specifications for estimates.



Affiliates:

Clinton Bridge Corporation
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BRIDGES

Allied engineers adapt methods to the job, often employing water erection with floating equipment to shorten bridge-building hours.



INDUSTRIAL BUILDINGS

Similar equipment in each of Allied's three plants speeded up fabrication of structurals for this giant industrial plant.



HIGHWAY STRUCTURES

3250 Tons of steel were fabricated by Allied for this California highway bridge . . . erected according to Allied's precision method.

» **WHAT MAY** be the fiercest competition since the middle 1930's appears to be prevailing in the general contracting industry in the construction of buildings, highways, railroads, public utilities, dams and other engineering projects.

A large volume of work is coming on the market, indicating that 1950 can be another year of a record volume of construction activity on a national scale.

Construction costs have stabilized or are tending to stabilize at approximately 10 per cent below the peak of 1948. There appears little likelihood of a drastic change in cost trends immediately.

Contractors report an adequate supply of materials, machinery and manpower generally, with continued increases in labor productivity and efficiency of contracting organizations.

Full Value for Money

These factors indicate that the public is receiving full value for its investment in construction.

These are the principal facts resulting from a survey of current construction conditions conducted by The Associated General Contractors of America for study at its 31st annual convention February 27-March 2 at the Palace Hotel in San Francisco.

The survey was conducted among the A.G.C.'s 110 local affiliated organizations, and among its directors, throughout the United States and in Alaska, representing more than 5,500 leading firms which annually perform an estimated 80 per cent of the nation's contract construction.

The association will study major problems to be encountered by the industry in performing a possible record \$30,000,000,000 total construction volume during 1950, with \$20,000,000,000 in new construction and the remainder in maintenance and repair operations.

Like Last Fall's Results

The survey conducted in February brought results similar to one conducted last September by the association. The principal change was in the continued increase in competition.

Building construction costs, for industrial, commercial and large scale residential projects, were reported to have largely stabilized at an average 8.5 per cent below the peak.

Highway construction costs, including airports, were reported at an average 12.8 per cent below the peak, with

decline in costs continuing in many areas.

Heavy construction costs, for railroads, bridges, dams, waterworks and other similar type projects, were reported stabilized at an average 10 per cent.

National Picture

While 1949 was a year of marked competition among contractors, the survey replies indicated that 1950 has ushered in a period of extreme competition, with some instances cited of more than 30 bidders on one job.

Contractors were cutting overhead expenses to the bone in order to achieve peak efficiency and stay in the competition.

Competition was reported alternately as "stimulating," "healthy," "fierce," "hellish," "rugged," and "dangerous."

Although construction wages were up, many reported these costs offset by increased productivity of labor.

Replies to major points in the survey, which represent the opinions of hundreds of general contractors who were consulted by chapter and branch executives and directors follow:

Costs: 50.5 per cent reported costs have stabilized; 42.5 per cent, costs still tending downward; 4.1 per cent, costs unchanged; 2.6 per cent, going up slightly.

The average cost stabilization reported was 9.9 per cent below the postwar peak, slightly lower than reported in the A.G.C. survey of last fall.

Volume: 14.3 per cent reported more work coming on the market, while 34.5 per cent reported volume unchanged from the recent high levels. However, 20.4 per cent reported less work coming on the market, and a few did not answer this question.

Last fall, 50 per cent reported more work coming on the market; 14 per cent, unchanged; and 31 per cent, less work.

Materials: 95.7 per cent reported an adequate supply of materials. Some reported a possible shortage of cement

or steel during the coming summer, and were concerned with the length of the coal strike.

Equipment: Practically all the replies reported an adequate supply of construction machinery.

Manpower: 96.5 per cent reported an adequate labor supply, compared with 94 per cent last fall. The other 3.5 per cent expected shortages to develop in some building trades next summer, particularly the trowel trades.

Productivity: Increased worker productivity was reported by 92.9 per cent of the replies, compared with only 79 per cent last fall. The remaining 7.1 reported no change in productivity.

Competition: 100 per cent reported greatly increased competition among contractors, and among sellers of equipment and material.

A breakdown of the replies by major construction classification follows:

Building Construction

Most building contractors reported costs stabilized; 58.4 per cent work volume unchanged; and 14.6 per cent, increased amount of work coming on the market.

Principal factors resulting in the stabilization of building costs were cited as fewer work stoppages; increased worker productivity and efficiency in contracting organizations; the stabilization of material and equipment prices; and greatly increased competition among bidders.

More public work is coming on the market, while private construction is dropping off in this work. It was indicated that the "postwar rush" is over.

Highway Construction

More than 80 per cent of the replies from highway organizations reported costs still going downward slightly.

Reasons cited in addition to increased worker productivity and organization efficiency, and stabilization of material and equipment prices, were that competition has increased in-

mously, and bidders are figuring smaller profits.

Highway contractors have reported capacity for much more work than is coming on the market. Increased work volume was reported by 45.5 per cent; unchanged by 36.4 per cent; and less work by 18.1 per cent.

Heavy and Railroad Construction

Two-thirds of the replies from heavy and railroad contractors reported costs stabilized, the other one-third costs downward.

Increased work was reported by 44.1 per cent; unchanged by 44.4 per cent; and less by 11.2 per cent.

Typical Comments

Some of the comments received in the survey follow:

"Competition in our industry between contractors and also between equipment dealers is greater now than at any time since the war. This is due, in part, to a greater number of contractors and greater efficiency in their organizations. . . . We seem to be going through a stage of growth that our organization has never experienced before. We are doing more work than in previous years, but on much smaller margin. . . . North-west highway-heavy-railroad contractor.

"Every evidence indicates that the trend of competition will be even keener in the year 1950. Another factor in the trend of competition is the larger number of bidders on each project. In the material and equipment field, there is increased competition and better prices are being obtained from material dealers, equipment dealers and subcontractors than has ever been obtained previously. . . . Northwest building highway-heavy chapter.

"Competition between contractors **VERY TOUGH**. . . Northwest building chapter.

"If (public) work were to stop, the construction industry would be in a very serious condition. This outlook is a dangerous situation. Private enterprise must get into its backlog of needed construction. . . . Competition in all phases is at a peak today. . . . It also should be stated that this is a healthy situation."—West Coast building contractor.

"There appears to be an abundance of bidders on all jobs, large or small. In fact, one project in the million dollar class had 33 bidders, indicating that there are probably too many con-

tractors and that they are all quite hungry. . . ."—West Coast highway-heavy contractor.

"The efficiency in operations of contractors is improving as a result of greater competition. There is a tendency to reduce unnecessary overhead expenses."—West Coast chapter.

"Highway and heavy construction in this area is leveling off, primarily for the reason that there is inadequate planning . . . and as a result, competition is increasing. . . ."—Mountain region chapter.

"Contractors have a large equipment surplus, and the trend is to increase the volume of work to maintain their same profit."—Mountain region highway contractor.

"Construction costs in the area, particularly in the highway field, seem to be going down right along and they are not yet stabilized. For instance, grading work is down to less than 50 per cent of the peak cost, concrete structures down 30 per cent; paving down 15 per cent and the general trend is still downward."—Southwest region highway-railroad contractor.

"It appears that present bidding prices in this area do not have a profit margin sufficient to enable further reductions. Productivity of labor and efficiency of contractors' organizations have increased and some further increase is anticipated. In the present market, such increases of efficiency must be obtained in order for the individual contractor to meet competition. . . . On every job of any size, we find several out of state bidders who have not previously bid in this state."—South central builders chapter.

"Over-all costs for highway work, according to figures as of January 1, 1950, are down 23 per cent from the peak, which was reached (here) in the last quarter of 1947. . . ."—Southwest highway chapter.

"This job called for fast completion and winter work and they received 38 bids. I don't believe that I have ever seen a time when there were as many heavy construction contractors willing, able and anxious to build work."—West North Central region contractor.

"Volume of building construction . . . is chiefly influenced by the enormous program of state work which will probably hit its peak in 1950."—West North Central builders chapter.

"Principal influences seem . . . that contractors who have expanded their organizations are now attempting to keep them intact by taking work at

prices which are somewhat lower than can be fully justified."—West North Central builders chapter.

"The change from cost plus to firm quotations on practically all projects . . . has made the contractors organizations more efficient, and a better and more competitive supply of materials and equipment."—East North Central heavy-railroad contractor.

"Price cutting alarming—serious."—East North Central builders chapter.

"The competition amongst contractors is 'hell' which I think covers the point pretty thoroughly. . . . I believe that productivity of labor is improving as well as general efficiency of contractors' organizations, and with the majority of contractors being such as they are, I see no reason why our improved efficiency should decrease."—East North Central building highway-heavy contractor.

"Productivity of labor has continued to improve, and is at highest point since war."—East South Central building highway contractor.

"Competition is fierce in all fields, particularly among contractors. . . . They are bidding like each letting will be the last one in history."—East South Central highway chapter.

"The competition between contractors . . . both among general contractors and in the various subcontracting classifications . . . has progressed to such an extent that some concern is beginning to be felt for the welfare of the industry as a whole."—South Atlantic highway-heavy building chapter.

"Our opinion is that costs to the owner as of right now are too low, and will rise . . . competition . . . has gone beyond the use of the word 'keen' and is now in a position called 'ragged'."—Middle Atlantic highway-heavy contractor.

"We look forward to a rather successful year in this area in view of the large projects planned and the promise that they will be let before the year expires. However, you may be assured that profits will be smaller and the owner will secure more value per dollar than he has in the past nine years."—Middle Atlantic highway-heavy chapter.

"Appears to be constant market with public work making up losses of commercial and industrial work. . . . Productivity up to a point about offsetting wage increases. . . . Competition very keen."—New England builders chapter.

» THE CHANGED picture of the American skyline and appearances of buildings that will result if designers plan structures to resist the effects of atomic blasts in the future, can be drawn from the report made public last month by the National Security Resources Board.

Reduction of building heights, elimination of long factory walls and vulnerable saw tooth roofs, dispersal of industrial buildings, general earthquake-resistant construction, underground shelters for personnel and essential equipment, duplication of firefighting facilities on the outskirts of cities, and fire breaks in city planning all have their places in the report.

The effect that the report may have on construction generally cannot be estimated, but it can be assumed that military construction may well be affected, since the study, "Damage from Atomic Explosion and Design of Protective Structures," was prepared jointly by the Atomic Energy Commission and the Department of Defense.

Presidential Assistant John R. Stechman, acting chairman of the NSRB, has sent copies to state governors "for guidance in the development of state and local plans for civil defense."

Concrete, Steel Emphasized

The study draws its conclusions from the effects of the "nominal" atomic bomb, roughly equivalent to 20,000 tons of TNT, on Japanese cities. There, reinforced concrete buildings of earthquake-resistant design withstood the blast "quite well."

American multi-story buildings, usually designed to withstand wind load only, are considered less resistant to collapse; tall buildings with heavy steel frames and a long period of vibration should withstand the effect of blast very well; but our steel industrial buildings, with saw tooth roofs designed as rigid frames, probably would fare no better than those in Japan, according to the report.

The strongest structures are heavily framed steel and reinforced concrete buildings, while the weakest are probably shed type commercial structures with light frames and long spans of unsupported beams, the report says. Brick structures where the walls support a load were cited as having poor resistance to blast, while well-constructed frame residences show good resistance.

Design to Resist Atom Blasts Could Alter American Skyline

- Tentative Recommendations by Resources Board
- Reinforced Concrete, Heavy Steel Framing Stressed

Japanese bridges withstood vertical blast loads very well, "and there is no reason to believe that all bridges would not behave in a similar fashion."

Protective Construction

The report states, "New construction affords the best opportunity for the inclusion of measures of protective construction at minimum cost," particularly as to location.

Location of new facilities underground in an existing mine or a site excavated in rock is emphasized.

"This provides a high degree of protection and the cost is not unreasonable, particularly when an existing mine is used. Studies of European experience and possibilities in this country indicate that for the most vital industrial facilities underground construction is entirely practical."

Structures should be strengthened against lateral and downward blast forces.

The general solution recommended is provision of transverse shear walls, lateral beams and deep lateral trusses, and the design of concrete floors and roofs to transmit lateral forces to shear walls. In bending caused by frame action, the conventional use of columns as the resisting elements "is unsatisfactory for high lateral forces."

Materials that would be hazardous to occupants when under blast forces, and materials which are not fire-resistant, should be avoided.

Structural grade steel was found better for reinforcement than hard grade, since it may elongate or deform without failure.

The report suggests that:

For multi-story buildings, reinforced concrete or steel frame, the designer assume a horizontal wind component of 90 pounds per square foot, and vertical component of 70 pounds per square foot, for protection against a blast at a horizontal distance of one-half mile and a height of 2,000 feet. Wind- or earthquake-resistant design

is recommended, based on the experience in Japan for this type of building limited to 100 feet in height, corresponding roughly to design for a lateral force equal to 10 per cent of the weight.

A table of proportionately reduced pressures is provided for buildings to be erected at greater distances from probable target centers. Suggestions for smaller reinforced concrete buildings and steel mill buildings are made, as well as for strengthening existing structures, "a much more difficult problem." It recommends that bridges be analyzed dynamically.

"There remains a great deal to be done before satisfactory design procedures can be established," the report states, adding that study is being given to design by the Defense Department and educational institutions.

The report was taken from material being incorporated into a complete handbook on atomic weapons effects.

Japanese to Bid on Okinawa

The Corps of Engineers has about \$100 million for improvements almost exclusively on Okinawa, including retaining walls, water works, sewage disposal plants, barracks, roads, etc. The work will be advertised on a lump sum contract basis throughout General MacArthur's Far East Command and among interested American contractors.

Local and Japanese labor is to be used as far as possible, with indications that all skills except supervisory can be obtained from Japan, while unskilled labor is plentiful on the island itself. Most equipment is to be furnished to contractors out of stock.

A number of unusual problems are expected to result from work on this plan to have the American dollar do double duty for the Japanese economy by procuring as much material and labor as possible from Japan.

Toward Improved Planning Of Public Works Programs

By Pere F. Seward

Commissioner, Community Facilities Service, General Services Administration

» THE FIRST advance planning program was authorized under Title V of the War Mobilization and Reconversion Act, passed in October 1944, as World War II was entering its final stages. The program was completely successful since for the first time in the history of our country, real advance planning for public works was accomplished on a large scale.

The act was passed at a time when there was considerable fear that demobilization of the armed forces and reconversion of industry could not be effected without severe unemployment. The main idea behind the first program was to encourage state and local governments to build up a reserve of fully blueprinted public works, ready to be placed under construction should private construction not develop rapidly during the early postwar period and utilize available manpower.

Project Shelf Declining

Fortunately, such an emergency did not develop, and it was not necessary to throw a large part of the reserve under construction at one time. Nevertheless, individual plans blueprinted under the program have been steadily going under construction from month to month. This situation constitutes a drain on the reserve because no new advances have been approved since June 30, 1947 (at which time the authorizing legislation expired). In other words, we have a continuously declining volume of planned projects, rather than an increasing or a stabilized shelf.

Advances were approved under the first advance planning program in the amount of \$52,447,000, to plan 6,790 projects with an estimated construction cost of \$2.7 billion. Planning has been completed on 5,954 projects; 1,741 of these projects have been placed under construction, and the planning advances for them had been repaid to the government (all above figures are as of September 30, 1949). In authorizing a new program under

Public Law 352 on October 13, 1949, Congress recognized that this depletion of the reserve as projects go under construction must be countered by a fresh inflow of planning projects if the reserve is to fulfill its function.

Public Law 352 authorized \$100,000,000 for a new advance planning program. The authorization for the new program vests a wider discretion in the administrator in apportioning planning funds to the states than was the case under the old program. This will enable us to allot planning funds more effectively to localities where large-scale drops in construction and construction employment may occur.

There now exists throughout the country a great backlog of much needed state and local public works. As a result of this situation, preliminary checks indicate that there will be a continuous and substantial flow of worthwhile applications for planning advances during the first half of 1950.

During the last quarter of 1949, the Community Facilities Service organization was readied to handle such an inflow of new applications. In the

administration of any new program, some errors are inevitable. These have been recognized and steps have been taken to prevent a repetition. A new manual of instructions and regulations has been issued to the central office and field staffs for guidance. New reporting and processing forms, including application forms, have been issued. A field review is nearing completion of some 2,300 previous applications for planning advances which were awaiting approval at the time the authority to make further advances expired. When this has been completed, a determination can be made as to which of these applications are presently eligible for approval. All of these preparatory steps take time, but they are absolutely essential to the success of the new program.

Sponsors Have Wide Latitude

I am confident that the second advance planning program will produce fine results, and that we shall again have in the second program the same close cooperation between the federal government and the state and local governments which was evident in the first program. Under the programs, state and local governments have the widest latitude in planning their projects in line with the particular public works objectives of individual states and local public agencies. Such action will serve to create and maintain a well rounded reserve of useful, fully blueprinted public works projects to

GSA Now Geared for Plan Loan Program

• Sewage Treatment Plants Dominate First Applications Approved

The first federal loans for the advance planning of state and local public works projects were announced last month by the General Services Administration as the agency prepared to gear the program to approvals of \$5 million per month until funds in hand are exhausted.

The last session of Congress voted an authorization of \$100 million for two years, which will cover the planning of an estimated \$5 billion of public works of all types. Of the authorization, GSAs Community Facilities Service now has \$8 million in cash and \$17 million in contract authority. The federal budget for next fiscal year asks another \$14.5 million.

Eighteen sewage treatment plants

and collection systems, two school facilities, two water systems, a storm sewer and a grade separation comprised the first 24 projects for which loans were approved. The \$394,330 total will cover the projects in 11 states, which will have a final construction cost of more than \$12 million.

Applications had been filed by the middle of February for more than 250 projects having an estimated construction cost of more than \$250 million. In addition, the agency was screening the old applications on hand when the last advance planning program expired in 1947.

GSA Administrator Jess Larson increased the loan apportionment to four states and Alaska.

Condensed from *Public Construction*, published by General Services Administration.

help in the stabilization of construction operations.

The program affords an opportunity for cooperation between the federal government and between the many state and local governments. As such, it is in the best American tradition. In addition, it also presents an opportunity for cooperation between the various levels of government and between many elements of private industry including architects, engineers, contracting organizations, planners, et al. Again, this is in the best American tradition, for this program has been reenacted in a response to the needs of communities as well as of the whole nation.

Need Many Projects Now

Due to long years of postponement, huge requirements for all types of public works have simply piled up. It is not surprising, therefore, that there is pressure for essential public projects such as schools, hospitals, water facilities, sewer facilities, administration buildings, highways, conservation projects, et al. It is not possible to meet these needs all at once, or even for some years, even if the current record volume of public construction continues. A determination of what can feasibly be built in view of these needs is a most important question facing local public officials responsible for public construction. Its solution requires a judgment as to the most essential projects immediately required within each community.

Orderly, Efficient Basis

The program can serve as an important aid in this decision. The process of blueprinting takes considerable time; hence, it must be undertaken some months or even years in advance of the schedule for construction. With a shelf of completed blueprints to fulfill the most essential needs, each community would be in a position to provide these essential needs according to the proper priority. In this way it can also develop long-range programs for the future.

Thus, even apart from the need to maintain an ample reserve of fully blueprinted projects, ready for use in the event of an emergency, the advance planning program can assist communities to meet their most essential public works needs in an orderly and efficient fashion.

Canada Reports Record Volume for 1948

• Building Is Up Sharply; Separate Contracts Flourishing

Canada, like the United States, had a record construction year in 1948—but there were marked differences in how the money was spent.

The Dominion Bureau of Statistics summarized it this way: "The reported value of work performed in Canada within the Construction Industry reached an unprecedented high of \$1,665,561,000 in 1948. This amount should be supplemented by \$414,934,000 which represents the value of work performed with their own forces by the various railways and telephone companies operating in Canada."

The DBS report, received in this country as the old year ended, showed one distinct difference from the 1948 picture in the United States. Building construction, which accounted for 65 per cent of all construction reported in 1948, was higher by 30 per cent than it had been in 1947 and 148 per cent up over the 1941 figure.

New Construction Up 38 Per Cent

New construction valued at \$1,383,553,000 was up 38 per cent over 1947, and was up 182 per cent over 1941, while, on the other hand, the value of construction repairs, additions, etc., was higher by only 11 per cent.

Said DBS: "These lesser increases in construction repairs, accompanied by greater rises in new construction, are generally regarded as a healthy sign both for the industry as well as for the economy as a whole."

General and trade (specialty) contractors, in showing an absolute increase of more than \$389,000,000 over 1947, performed 89 per cent of the total \$1,665,561,000 in construction. This relative figure had only been exceeded, in the 1941-1948 series, by 1942 work when 91 per cent of the total was represented by contractors' work, DBS said.

Government Uses Contractors

"On the other hand," commented DBS, "government departments played a correspondingly less important part in the industry. It should be remembered, of course, that much of the construction work financed by governmental bodies is usually carried out by contractors."

That the separate contracts problem is very much on the agenda of the day

in Canada was indicated by the following paragraph from the DBS report:

"A good deal of interest has been displayed recently concerning the volume of work performed by trade (specialty) contractors operating independently of general contractors and those performing their work on a subcontract basis. . . . In general, the trend is toward more work having been done by independent operators and, consequently, a smaller percentage of the total undertaken on a subcontract basis since 1941. It is interesting to note that, of the 10 trades reviewed, eight of them showed more work completed in 1941 under subcontract than by separate contract arrangement. However, in 1948 the situation changed considerably and only three of the 10 showed the same situation in existence, while seven trades indicated that the bulk of the work was done on a separate contract basis. At the same time, the value of work had increased to the extent that both types of contractors combined had, on the average, performed more than three times as much in 1948 as in 1941."

Alaskan Projects Approved

More than half the initial \$5 million appropriated for public works construction in Alaska has been allotted by General Services Administrator Jess Larson, and bids will be taken shortly on 12 relatively small, emergency projects.

Congress has authorized \$70 million for a five-year program at federal expense, but with an average of 50 per cent of the cost recoverable by long-term sales under prearranged agreement. Applications already have been filed for 50 projects to cost more than \$18,000,000.

The projects approved were recommended by Governor Gruening of Alaska, and include school, water, sewer and street improvements. The GSA's Community Facilities Service has established a district office in Juneau to supervise the work, which is expected to begin before June 30.

New Federal-Aid Highway Bill Would Authorize More Funds

- Measure Carries Total of \$620,000,000
- Includes Interstate System for First Time

» THE ADMINISTRATION late in February introduced its new federal-aid highway authorization legislation, calling for a real increase over the funds now made available under this program, but by no means meeting the recently announced (Page 35, January Construction) goals of The American Association of State Highway Officials.

Representative William M. Whittington (D., Miss.), chairman of the House Public Works Committee, presented the bill (H.R. 7398), which would authorize appropriations totaling \$620,000,000 for federal aid highway work and other federal road work in the fiscal years ending June 30, 1952, and June 30, 1953. The bill went at once to Mr. Whittington's committee, where, presumably, discussion will bring about at least minor changes.

The Whittington bill proposes that \$500,000,000 for federal aid work should be divided as follows: \$225,000,000 for projects on the federal-aid primary highway system; \$150,000,000 for projects on the federal-aid secondary system; \$125,000,000 for projects on the federal aid system in urban areas.

Asked \$810,000,000 Annually

Last fall, The American Association of State Highway Officials decided in a special meeting at Chicago that appropriations of \$810,000,000 annually were needed, in contrast with the \$450,000,000 provided under the present legislation.

The Whittington bill goes at least part way in meeting the A.A.S.H.O. program in that it would authorize, for the first time, additional appropriations of \$70,000,000 each year for the National System of Interstate Highways as such. The present legislation carries no appropriation for this.

The sum proposed for the Interstate work would be apportioned among the states in the ratio which the population of each state bears to the total population of all the states as shown by the latest available federal census, with certain qualifications.

Other Authorizations

The Whittington bill also would authorize \$20,000,000 annually for forest highways and \$12,500,000 annually for forest trails and development roads. It also carries authorizations totalling somewhat more than \$18,000,000 for roads in national parks, Indian reservations, etc.

In line with a suggestion of the A.A.S.H.O., the bill would provide that any state which issued bonds to develop the interstate system, on a toll-free basis, could use the federal-aid funds for this system to retire the annual maturities of the principal indebtedness of such bonds to the extent that the proceeds of the bonds actually

are spent on the interstate system.

Another A.A.S.H.O. recommendation also is incorporated in Mr. Whittington's legislation. This would provide that, where a city or county has the obligation to maintain roads built with federal aid, and fails to do so, federal aid would be withheld only from the city or county and not from the state as a whole, as is now the case.

Emergency Expenditures

It also would provide that not more than \$10,000,000 of any appropriation under the authorization could be spent by the commissioner of public roads, after application by any state, for repair and reconstruction of highways and bridges which he found had suffered serious damage as the result of disaster over a wide area. This would require a joint finding of disaster by the commissioner and the governor of the state involved.

It also would limit federal spending in such emergencies to 50 per cent of the amount needed for repair and reconstruction work.

The emergency provision is in line with an A.A.S.H.O. recommendation.

Senate Committee Cuts Back Housing Bill

- Banking Unit Heeds Warning of Federal Reserve

Largely because of strong warnings from the Board of Governors of the Federal Reserve System that the measure was inflationary, the Senate Banking and Currency Committee late in February sharply cut back the Administration's so-called middle income housing legislation (Page 25, February Construction) before sending the measure to the Senate floor for action.

The committee approved the modified version of the bill (S. 2246) by a vote of 9 to 4 after rejecting, by a vote of 7 to 6, a proposal by Senators Irving M. Ives (R., N.Y.) and Charles W. Tobey (R., N.H.) which would have eliminated entirely direct federal aid to housing cooperatives and would have put aid to such cooperatives under one of the Federal Housing Administration's mortgage insurance programs.

The committee rejected the Administration's proposal for \$2,000,000,000 in government guaranteed loans for the housing co-ops and substituted, instead, a proposal for government insured mortgages totalling not more than \$1,000,000,000.

New U. S. Corporation

The mortgages would be guaranteed by a new government corporation, in which stock would be held jointly by the cooperatives and the government. This corporation would be financed originally by \$100,000,000 advanced by the government. Another \$25,000,000 would be made available for advance planning loans for the cooperatives.

Other features of the bill as the committee approved it:

1. It provides \$150,000,000 for direct, long-term loans to veterans for homes, where they can not obtain private financing. (This cut back by half the original proposal.)
2. It provides a total of \$300,000,000 for long term, low-cost loans to educational institutions for student and faculty housing.
3. It authorizes \$25,000,000 for Reconstruction Finance Corp. loans to manufacturers of prefabricated homes.

The bill will almost certainly run into strong opposition in both Senate and House.

» THE NAMES give some indication of the real story—and so do the figures.

The story is this: Pipeline construction, a unique branch of the industry which is building America year after year, has boomed mightily in 1948 and 1949—and promises to boom again in 1950.

"The Toughest Inch"—"The Super Inch"—1,800 miles of a giant line running from Texas to New York—a 34-inch line running from San Francisco to Texas. These make up part of the story. Part came, too, from the files of the Federal Power Commission.

FPC Figures Cited

The FPC authorized construction of 7,571 miles of gas pipelines in 1949, as compared with 1,010 miles in 1948. This, it should be emphasized, concerns only gas pipelines and does not touch on such new petroleum lines as may have been built or authorized. There are now hanging fire 13,744 more miles of construction—awaiting authorization, etc.

The pipeline constructor is, for the most part, a pretty specialized sort of operator. It is interesting that, in the record of the big accomplishments of the last two years, the firm names which keep popping up are usually names of members of The Associated General Contractors of America, Inc., and its Mid Continent Pipe Line Chapter.

"The Toughest Inch," completed ahead of schedule by the H. C. Price Co., A.G.C., Bartlesville, Oklahoma, is a 268-mile steel tube, 26 inches in diameter, certainly one of America's major pipeline construction projects during 1949. It will supply natural gas to Baltimore, Maryland, for the first time in history and will also add to the natural gas supply of Washington, D. C. (Pictures of "The Toughest Inch" construction are on Pages 30 and 31.)

Charleston to Rockville

This natural gas transmission line was built by the Price organization from a point near Charleston, West Virginia, to Rockville, Maryland, near

Pipeline going down 2.5 miles east of Bassfield, Mississippi. Caterpillar diesel D8 tractor and other Caterpillars equipped with Trackson sidebooms are laying down the pipe.

Pipeline Construction Booms; Names and Figures Tell Story

- "Toughest Inch," "Super Inch" Are Among Them
- Good Volume Is Seen Again for This Year

Washington, for two subsidiaries of the Columbia Gas System, Inc., one of America's largest natural gas distribution companies.

Construction of "The Toughest Inch" began in the late Spring of 1949 and was interrupted shortly thereafter by a major flood at Petersburg, West Virginia. Then, for nearly a month, the Price men were assisting in flood relief and rehabilitation.

Total cost for constructing "The Toughest Inch" was more than \$15 a foot, or almost \$80,000 per mile, which is believed to set a new high.

Approximately \$3,000,000 worth of heavy construction equipment was employed on the job.

More than five million cubic yards of rock and earth were moved.

There were the usual myriad of road and stream crossings, nine railroad crossings and two major river crossings—those of the Potomac and the Shenandoah. (An unheralded explosion of the rockbed of the Potomac not too far above Washington caused a one-day press wonder in the capital until the cause was determined.)

(Continued on page 32)





Two seconds after 15 tons of dynamite blasted granite bottom of Potomac River near Washington, D. C.

"The Toughest Inch"



Wagon drills prepare way for blasting rock ledge for pipeline ditch.



Tractor-team of sidebooms begins maneuvering coated-and-wrapped pipe section toward Shenandoah River crossing. Concrete river clamps will hold it in place even at flood stage.



On brow of a steep Allegheny mountain, workmen prepare to attach another joint. Cable at left prevents sideboom from slipping backwards into 1,000-foot gorge below.

PIPELINES

Squirming up steep mountainside, a dozer pulls, and a sideboom tractor pushes bending machine. This type of operation was repeated hundreds of times on "Toughest Inch." Right-of-way is only 25 feet wide.

The busy scene below was typical at numerous stream crossings barring pipeline path. This section of pipe is almost ready for lowering into ditch to forge another link in the 268-mile Cobb Station-Rockville line.



(Continued from page 29)

"The Super Inch"

"The Super Inch," with all the fixings, will cost \$150,000,000. It is a 1,600-mile job, 34-inch pipe. Last year the industry reported that the largest wheel-type trencher ever made was cutting a groove 44 inches wide and from 5.5 to 8.5 feet deep through the California hills in preparation for laying the largest diameter pipeline ever built anywhere for the high pressure transmission of natural gas.

"The Super Inch" is being built as a joint venture by the Bechtel Corp., San Francisco, A.G.C., R. A. Conyes, another California contractor, and the Price organization.

It is obvious that the building of such a pipeline is a remarkable combination of big jobs in engineering, manufacturing materials and equipment, transportation and unusual construction operations.

This was the situation on one stretch: In advance of actual construction, benches 54 feet wide were carved out of the hillsides along much of the right-of-way. This provided a working space for the huge machines which dug the pipeline trench and for the other giant machinery which performed or assisted in other necessary tasks.

At some places, it was reported from the West Coast, the tops of hills were cut off to eliminate steep grades which would require angles in the pipeline. A great deal of incidental construction was necessary to allow the construction of the pipeline proper. Steel and concrete structures—several more than 200 feet long—had to be built to support the pipeline across the many canyons and gullies.

From Texas to Ohio

Hundreds of workmen from Texas to Ohio started last summer on an 800-mile Texas Gas Transmission Corp. line running eastward. Contracts on this big job went to the N. A. Saigh Co., Inc., A.G.C., San Antonio, Texas; the Latex Construction Co., A.G.C., Houston, Texas; the O. C. Whitaker Co., A.G.C., Fort Worth, Texas; the J. R. Horrigan Construction Co., Inc., A.G.C., Houston, Texas; Williams Brothers Corp., A.G.C., Tulsa, Oklahoma; and Midwestern Constructors, Inc., A.G.C., Dallas, Texas.

As laid out on the charts, this called, among other things, for crossing 149 highways and 55 railroad lines, owned by 21 different railroad companies.

On this job, as on others, it is interesting to note that there have not recently been any major questions of ability to obtain supplies.

Jobs Are Typical

The jobs which have been singled out here are typical of the work which the pipeline constructors are doing, but there are many others.

The magazine *Gas*, which devotes a special section to pipeline work, had, for instance, this to say about the construction work in this field last year:

First the headline: "1949—Boom Year for Gas Pipelines."

Then, the lead of the story itself: "Figures like 1,000 miles, \$75,000,000, 50,000 compressor h.p. were rolling glibly off the tongues of blasé pipeliners in 1949 as one of the greatest years in pipeline history drew to a close."

"It was a year of superlatives. The Little, Big and Biggest Inch were pushed into the background. . . . Other lines were going into operation."

Mississippi River Fuel's pipeline to St. Louis, a take off from the Big Inch to Staten Island, Michigan-Wisconsin's major carrier from the fields of the Southwest to the north country, and San Diego's new lateral from the Biggest Inch. . . ."

Added *Gas*: "The Federal Power

Commission, meanwhile, was assuring plenty of work for pipeliners in months and years ahead. During the year, according to *Gas* statisticians, working with material made available by the commission, 6,474 miles of major pipeline work were authorized. The total costs of those projects ran over \$565,000,000.

A Look Ahead

"Looking ahead to 1950, we find the prospects excellent for another banner year, not only in completing projects under way and building new ones for which authorization has recently been given, but also for possible new (FPC) approvals."

"Applications for new, significant and expensive lines are being pushed as the new year comes in. Three important sectors of the United States are still clamoring for the natural gas they have been so long denied: The Northwest, New England, and the Southeast. . . ."

At the time *Gas* wrote, it estimated that there were 8,500 miles of pipeline under construction—a figure which seems conservative; that there were applications under consideration calling for 14,600 miles; that the aggregate of all pipelines now in operation exceeds 26,000 miles, through which pass annually three trillion cubic feet of gas.



Here is another photo of the work near Bassfield, Mississippi (see Page 29). Note the name of Wunderlich & Griffin Pipeline Construction Co., A.G.C., Tulsa, Oklahoma, on the front of the Caterpillar D8 tractor.

» THERE IS a great need for additional school facilities in the United States—and a great market for building contractors in the construction of those needed facilities.

These two facts stood out last month as various segments of official Washington added their voices to the new emphasis of President Truman on the need for more schools (Pages 24, 26, February *CONSTRUCTOR*) and as a special Administration-Capitol Hill task committee speeded preparation of a report on conditions in emergency areas.

The General Services Administration, which has helped supply personnel for the task committee, pulled the available estimates together and came up with the statement that no less than eleven and one-half billion dollars volume, exclusive of land acquisition costs, would be needed in the next 10 years to meet the present demand in public elementary and secondary schools and publicly financed colleges and universities.

10 for the Grades; 5 for Colleges

Noting that the nation emerged from World War II with serious shortages of all sorts of community facilities, GSA said that one of the most critical of these was that in school housing.

This school plant deficit is the result of a combination of factors—construction postponement during the depressed '30's, further deferment because of building restrictions in the defense and war periods, and rapidly mounting school enrollments resulting from higher birthrates continuing longer than expected.

The enrollment figures are startling to one who does not follow educational matters from day to day. The number of children attending public elementary and secondary schools averaged 19.8 million in 1946, according to the Office of Education of the Federal Security Administration. Average daily attendance is now near the 21,000,000 mark. It is expected to keep increasing steadily until 1958 and then level off at an estimated 27.6 million.

On the basis of these expected increases and of preliminary surveys, the Office of Education recently estimated the public elementary and secondary school plant needs for the decade of the '50's at 10 billion dollars. It also estimated recently that another five billion would be needed in the same period for college and univer-

U. S. Sees 11.5 Billion Market in Schools; Federal Aid Talked

• Communities' Needs Great as Population Grows

sity building needs (Page 34, September 1949 *CONSTRUCTOR*).

Comments *Public Construction*, journal of the GSA: "Translated into publicly financed construction costs (omitting estimated site and equipment costs from both totals and omitting private outlines in the higher education estimate), this would indicate that public education construction requirements during the next decade will approximate 11.5 billion dollars at current production costs. *This is equivalent to all the public school construction put in place since 1924.* To meet the current and growing need for more schoolrooms, it will be necessary to compress within the next decade as much school construction as was accomplished in the past two and one-half decades."

Converted into 1949 prices, this is what that volume picture looks like: 1920-1929: \$6,597,000,000; 1930-1939: \$4,100,000,000; 1940-1949: \$2,756,000,000; 1950-1959 (estimated needs): \$11,500,000,000. The data through 1949 is from the Departments of Commerce and Labor; the estimate is, of course, that of the Office of Education.

After a slow postwar start, contracts for \$705,000,000 were awarded in 1948 and for \$734,000,000 in the first three quarters of 1949. GSA feels there is a tendency for school construction to level off at less than the needed billion-plus a year.

Picture Spotty Around Country

The picture around the country is spotty. Some areas show encouraging progress when compared with indicated needs; others show construction lagging behind even minimal needs. For example, the leading area in initiating new school construction during this period was the East and North Central Region (Illinois, Indiana, Michigan, Ohio, and Wisconsin) with \$360,000,000 or 20 per cent of the national total. Contrarily, again for example, the Middle Atlantic States (New York, New Jersey and Pennsylvania) can report new school building awards of \$268,000,000 representing 15 per cent of the national total, lag-

ging behind the region's estimated requirements, which are 25 per cent of the national total.

In such circumstances, it is natural that there is a good deal of legislation before the 81st Congress proposing federal aid in one form or another for construction of public elementary and secondary schools. The American Parents Committee, a lobby interested in all legislation affecting children, has an analysis showing no less than 14 such bills, only one of which is a duplication of another, now pending in the House.

There is some doubt in the present temper of the Congress (Page 24, February *CONSTRUCTOR*) that any of these will be pushed through to final action, although the A.P.C. does not concede this. The bill it backs (H.R. 5718) was introduced by Representative Hugh D. Mitchell (D., Wash.) and would authorize, first, a \$5,000,000 appropriation for a survey of school needs and for plans for school buildings, and then would establish a continuing federal aid program.

Grants to States, Territories

This program calls for grants to the states and territories for school construction, with 97 per cent of whatever funds Congress appropriated on annual basis going to the states and three per cent to Alaska, Hawaii, Puerto Rico, and the Virgin Islands. For the first year only, 70 per cent of the first \$100,000,000 appropriated plus 10 per cent of any amount in excess would go to emergency federal construction in areas overburdened as a result of federal activities—as for example military or Atomic Energy Commission installations.

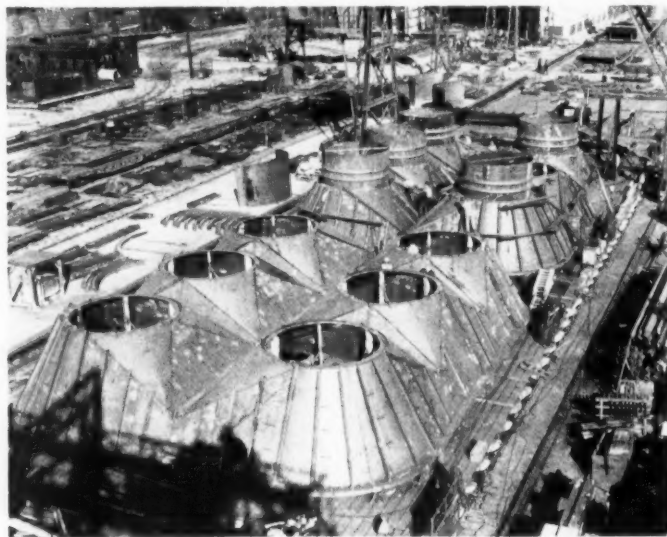
A similar bill was introduced into the Senate last year by Senator Hubert D. Humphrey (D., Minn.) with a group of other senators and was approved after the long-range aspects had been struck out by amendment.

Some of the other proposed legislation actually would authorize sums up to \$3,300,000,000 for five year periods.

There has been talk recently, too, of financing school construction with Reconstruction Finance Corp. loans.



A 700-foot approach fill has been completed on the Gloucester shore. Forty feet high, it is 200 feet wide at its base. In background, cranes are excavating and sinking timber piles to support eight concrete piers which will support an approach ramp.



Pictured are the bases of two of the six steel caissons which will be used as permanent forms to support the river piers. Bases of these two caissons measure 52 by 66 feet. Newport News Shipbuilding and Dry Dock Co. is building them.

Virginia Builds Its Most Costly Bridge

Construction is well under way on the most costly bridge project ever undertaken in Virginia—the 3,750-foot George P. Coleman Memorial Bridge across the York River between Yorktown and Gloucester Point.

Already completed is a 700-foot earth fill for the Gloucester approach road. An approach ramp supported by eight piers will carry the road to the bridge itself. The fill is 200 feet wide at its base and 40 feet at the top. During its construction, more than 75,000 cubic feet of earth were hauled from a nearby borrow pit. A creek whose course passed through the fill's location was re-channeled.

Six mammoth steel caissons are under construction in Newport News. They will be floated to the bridge site and used as permanent forms around which and on which the river piers will be built. Two caissons, which will support the piers on which the swing spans will rest, measure 52 by 66 feet and will be 110 feet in height. The four other caissons measure 42 by 66 feet.

Each caisson contains a network of steel framing. Parts of each caisson will be filled with concrete and each will have large steel shafts through which the sand and mud at the river bottom will be pumped.

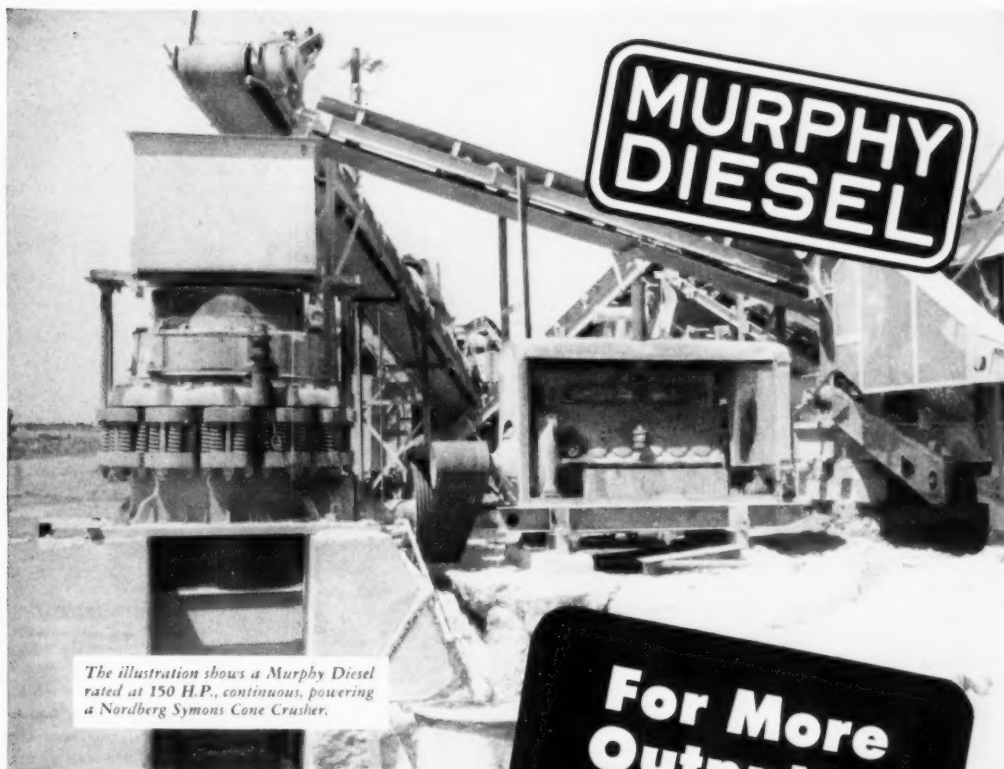
Building the river piers will be a double operation. First the caissons will be sunk and filled with concrete. Then concrete cylinders will be built on the caissons. Cylinders forming the two center piers will have a height of 90 feet, of which 40 feet will be under water.

Two Kansas City, Missouri, construction firms hold the contract for building the bridge's substructure. They are Massman Construction Co. and Kansas City Bridge Co., both A.G.C. Virginia Bridge Co. of Roanoke will build the superstructure and bridge deck. Subcontractor for the Gloucester approach earth fill was F. V. Williams Co. of Norfolk.

Though not the longest bridge in Virginia, it will be the largest from the standpoint of cost and the quantity of materials used in its construction. The over-all cost, including approaches and incidentals, will total more than \$9,000,000. It is being financed by toll revenue bonds.

It is scheduled for completion in early 1952.

THE CONSTRUCTOR, MARCH 1950



ANY crushing job will be more profitable when you have economical, dependable power. And that's just what has made Murphy Diesels so popular with crushing plant owners everywhere. The Murphy Diesel is a rugged, heavy duty power plant built to deliver its full rated power 24 hours a day, day-in and day-out. It's economical, too — *the Murphy Diesel uses less fuel per horsepower hour than any other engine in its size range.*

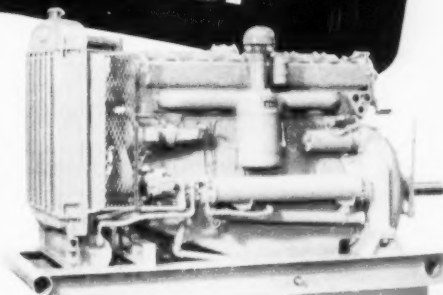
Such engineering features as "true" diesel operation, unit fuel injection, four valves per cylinder, hydraulic servo-type governor and many others are the reasons why Murphy Diesels are able to compile such impressive records. Of particular interest to crushing plant operators are the Murphy features that guard the engine against the destructive effects of dust and dirt — large oil bath air filter, positive filtered crankcase ventilation and full flow absorbent type fuel and lube oil filters... extra protection for you under rock crushing conditions.

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Units for construction, 90 to 220
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New England, Columbia Basin Projects Are Before Senate

- President Backs Northeastern Study Commission
- Approves Engineers-Reclamation Columbia Plan

» PROGRAMS which would mean large and continuing volumes of heavy construction in the future in the New England-New York and Columbia River Basin areas were before the Senate late in February, with a probability of action relatively soon.

These programs were in the form of amendments to the billion dollar plus omnibus river and harbor and flood control authorization bill (H.R. 5472; Page 34, November 1949 *Constructor*) which was on the Senate calendar as this article was written.

President Truman had thrown the official support of the Administration behind the Corps of Engineers-Bureau of Reclamation Columbia River Basin plan, in a somewhat modified form, and behind an amendment offered by a group of New York and New England senators, which would establish a study commission on hydroelectric and other water resource problems of the New York-New England area. This would be similar to a commission already operating for the Arkansas, Red and White River Basins.

President Writes Barkley

The omnibus bill already carried a proposal for a study by the Corps of Engineers of New England water resources, without reference to New York, as it reached the floor of the Senate, but President Truman wrote a special message to Vice President Alben W. Barkley, in his capacity as president of the Senate, to urge passage of the study commission plan suggested by the New York and New England senators.

The amendment would establish a study commission of seven members, including citizens from the region and representatives of the principal federal agencies concerned. The commission would utilize all the studies which already have been made, and would arrange for such further investigations as might be desirable. An advisory committee appointed by the governors of the seven states involved would work with the commission, and the commission's recommendations would be submitted to the governors

for their comments before their submission to the President and the Congress.

The commission's final report would be submitted in two years, after which the commission would go out of being.

The same proposal has been submitted as a separate bill (S. 2847) by Senator Theodore F. Green (D., R.I.).

Wants Projects to Go Ahead

Mr. Truman noted that some notable individual projects in the New York-New England area had been planned already, citing the St. Lawrence seaway and power project as an example. These, he said, should go ahead without further delay. No additional study is needed before they are constructed, he said, because they are obviously parts of any broad-scale program. He spoke in the same fashion of the Passamaquoddy project in Maine and the redevelopment of the power capacity of Niagara Falls, concerning which negotiations are now in progress with Canada.

Throughout his message, however, there was a strong insistence on the necessity for overall planning for the New England-New York area which seemed an echo and an amplification of what he had had to say in January on the desirability of a sort of super-valley authority (Page 50, February *Constructor*).

The President said that coordinated plans had been worked out in many areas of the United States for multi-purpose, integrated development of natural resources. But, he noted, the seven states in the New York-New England area had not, so far, had the benefit of such comprehensive study and planning. And, Mr. Truman added, these states have real and serious problems, among them those of controlling and using water to prevent floods, to provide domestic and industrial water supplies, and to furnish low-cost hydroelectric power.

Problems Must Be Met

These problems, Mr. Truman asserted, must be met if the seven states in the area are to participate fully in

the economic growth of the country.

Just before Mr. Truman's letter went to Capitol Hill, the Bureau of the Budget notified Secretary of Interior Oscar Chapman that the President had approved, with certain modifications, the Columbia River Basin development plan evolved by the Bureau of Reclamation and the Corps of Engineers in April 1949 (Pages 27, 28, May 1949 *Constructor*).

Submitted as Amendment

At the same time, the bureau made it plain that the Administration was sticking by its proposed Columbia Valley Administration plan (same *Constructor* reference), which has lain dormant since its introduction in April 1949.

The bureau requested Secretary Chapman to submit its letter of approval to the Senate at once, together with the recommendations for development of the Columbia Basin and other amendments (the New York-New England matter) to H.R. 5472. These amendments, it said in so many words, were in accord with the program of the President.

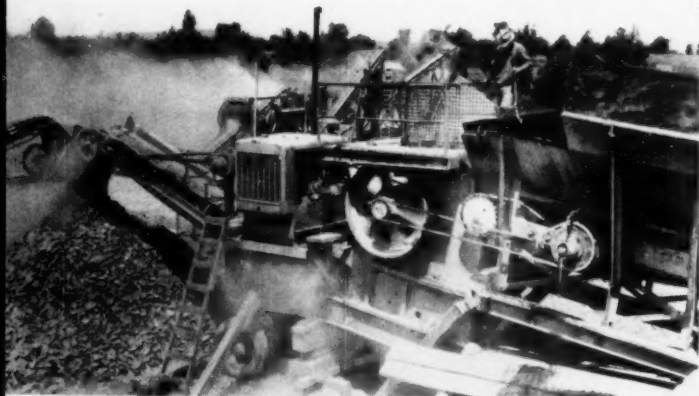
The President endorsed all irrigation projects proposed for construction by the Bureau of Reclamation in the agreement signed by the Departments of the Interior and of the Army, with the exception of the Mountain Home project. He also endorsed most of the flood control and navigation facilities proposed for construction by the Corps of Engineers, with the exception of the Snake River navigation channel, harbors on the Snake and Columbia Rivers and some other individual features.

Alaskan Proposal Disapproved

The President also agreed with Secretary Chapman's recommendation that the authorization for the development of the water resources of Alaska solely by the Corps of Engineers, as presently contained in H.R. 5472, should be eliminated.

The Bureau of the Budget advised Mr. Chapman that authorization of the program by Congress would make it more important than ever to establish what the bureau and Interior called "a better framework for the conservation and development of all natural resources in the Northwest"—that is, the Columbia Valley Administration, already proposed in Administration bills.

They don't know the word "quit"



↑ This "Caterpillar" Diesel D8800 Engine is one of four used to power a crushing plant for the Harms Brothers, General Contractors, Sacramento, Calif. Production averages 1,400 tons of ¾ rock in 8 hours. Another D8800, two D11000s and a D17000 complete the reliable, money-saving "Caterpillar" line-up here.

"This is all rock and I don't mean maybe," says Mr. M. O. McEachern about this new road construction on the Feather River Canyon Highway. Owned by the Piombo Const. Co., Belden, Calif., this "Caterpillar" Diesel D11000 Engine powers a Gardner-Denver 165 cu. ft. compressor which supplies air to jackhammers 8 hours per day, 6 days a week.



SPEAKING from long experience with "Cat" Diesels on road construction, Mr. M. O. McEachern of the Piombo Construction Co., Belden, Calif., has this to say: "Caterpillar" is the best in the world. For the beating we are giving them on our job, you can't beat them. I have been working and using 'Caterpillar' since they first came out and I am going to keep on using them."

And powering a Cedar Rapids crusher at the crushing plant of the Harms Brothers, General Contractors, Sacramento, "Cat" Diesel Engines rate just as high. The engines are located in the center of the job—a spot that's very dusty and hard on equipment, yet the "Cat" Diesels take the conditions in stride.

On road construction crushing operations or any job where dependable, low-cost power is needed, you can't beat the performance of rugged, steady, honestly rated "Caterpillar" Diesel Engines. For money-saving on-the-job facts about them, call your "Caterpillar" dealer today. Or send in the coupon.

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Address _____

50 Contractors Win Awards in Accident Prevention Work

- 10-Year Records, Secretary's Prize Are New
- More Firms Finish Contest This Year

» MORE THAN 50 awards for especially meritorious work in accident prevention in the construction field were to be presented to member firms, individuals and chapters and branches at the 31st annual convention of The Associated General Contractors of America, Inc., in San Francisco early this month.

The presentations were to climax a record year in The A.G.C. Accident Prevention Contest for the period ending September 30, 1949, which saw an increase of almost 43 per cent in the number of A.G.C. firms which finished out the contest year. This convention also was to see the first listing of member firms with the best 10-year records and the first presentation of a \$100 cash prize and certificate to the chapter or branch secretary or manager who has worked most effectively to promote accident prevention activity within his unit.

Among the firms competing in the last contest year, 184 finished as contrasted with 129 in the contest year ending September 30, 1948. A new contest is under way now and Harry J. Kirk, A.G.C. safety director and secretary of the association's Accident Prevention Committee, emphasized that it was still possible to enter this competition, which will end September 30, 1950.

Six Best Chapters Named

The winning A.G.C. chapters were divided into two groups of three each. One contained the chapters with more than 35 members; the other, those with 10 to 35 members.

In the larger chapter classification, the Pennsylvania Builders Chapter was the winner; The Constructors Association of Western Pennsylvania was second; The Associated General Contractors of Iowa was third. In the smaller chapter classification, the winner was again the Milwaukee Chapter, with the Detroit Chapter second and the San Diego (California) Chapter third.

The six contestants with the best 10-year records were divided, as were the annual winners, into two groups:

Those with more than average man-hour exposure (the average was 12,400,194 man-hours) and those with less than the average.

Maxon Firm First

First place in the more-than-average-exposure group went to the Maxon Construction Co., Inc., of Dayton, Ohio. Second was the Dravo Corp., Pittsburgh, Pennsylvania; third, J. A. Terteling & Sons, Inc., Boise, Idaho. All are heavy contractors.

In the less-than-average group, the H. P. Cummings Construction Co. of Ware, Massachusetts, was first; E. J. Cross Co., Worcester, Massachusetts, second; C. R. Meyer & Sons Co., Oshkosh, Wisconsin, third.

In the competition which ended September 30, 1949, the best records among the firms which had above the average man-hour exposure were:

Building Division (Average Exposure 305,280 Man-Hours): Trepte Construction Co., San Diego, California, first; Bryant & Detwiler Co., Detroit, Michigan, second; Klug & Smith Co., Milwaukee, Wisconsin, third.

Highway Division (Average Exposure 217,665 Man-Hours): T. L. James & Co., Inc., Ruston, Louisiana, first; Burrell Construction & Supply Co., New Kensington, Pennsylvania, second; Allegheny Asphalt & Paving Co., Inc., Pittsburgh, Pennsylvania, third.

Heavy Division (Average Exposure 749,780 Man-Hours): T. L. James & Co., Inc., Ruston, Louisiana, first; Maxon Construction Co., Inc., Dayton, Ohio, second; the Fluor Corp., Ltd., Los Angeles, California, third.

The best records among contestants with below the man-hour average were:

Building Division (Average Exposure 305,280 Man-Hours): F. E. Young Construction Co., San Diego, California, first; Henry Shenk Co., Erie, Pennsylvania, second; Thomas H. Bentley & Son, Inc., Milwaukee, Wisconsin, third.

Highway Division (Average Exposure 217,665 Man-Hours): J. D. Armstrong Co., Inc., Ames, Iowa, first; The Thomas E. Currie Co., Detroit, Michigan, second; George K. Werner & Son, Clay Center, Nebraska, third.

Heavy Division (Average Exposure 749,780 Man-Hours): Jutton-Kelly Co., Dearborn, Michigan, first; W. L. Johnson Construction Co., Columbus, Ohio, second; Ferguson & Edmondson Co., Pittsburgh, Pennsylvania, third.

Prizes were also given to a list of companies which were able to report no lost-time accidents. This list included:

Building Division: The Barry Co., Detroit, Michigan; Bauer Construction Co., Inc., Milwaukee, Wisconsin; Martin L. Bauer Construction Co., Middletown, Ohio; Frank M. Christensen, Coronado, California; E. F. Cramer, Indianapolis, Indiana; Fred R. Helwig, Millersburg, Pennsylvania; R. J. Hortie, San Diego, California; John P. Lentz, Dallastown, Pennsylvania; J. C. Orr & Son, Altoona, Pennsylvania; Henry Shenk Co., Erie, Pennsylvania; Stibbard Construction Co., Detroit; Talbot & Meier, Inc., Detroit; Trepte Construction Co., San Diego; Vrooman & Penn, Detroit; John C. Westphal Co., Detroit; F. E. Young Construction Co., San Diego.

Highway Division: J. D. Armstrong Co., Inc., Ames, Iowa; J. C. Costigan, Elkader, Iowa; Everts Brothers, Algona, Iowa; Gee Construction Co., Shenandoah, Iowa; M. O'Herron Co., Pittsburgh, Pennsylvania; J. T. Ryan, Oelwein, Iowa; George K. Werner and Son, Clay Center, Nebraska.

Heavy Division: George Carlson Co., Milwaukee; L. Walker Fauber, Ashland, Ohio; Henry L. Horn, Caldwell, Idaho; Jutton-Kelly Co., Dearborn, Michigan; James H. McQuade & Sons Co., Pittsburgh, Pennsylvania.

A special awards committee, composed of three members of the Accident Prevention Committee, was meeting as this was written to select the chapter or branch secretary or manager who would for the first time be awarded the prize for the best work in promoting safety work in his chapter.

Helmets on U. N. Job

Helmets, the trappings of war since long before the time of Caesar, are playing an important role in preventing injuries in the construction of a building designed as a capitol for peace.

Saying that the United Nations buildings on New York City's East Side were going up with a maximum of safety, L. J. Redding, general superintendent of construction on the big job, told the 20th annual safety convention and exposition of the Greater New York Safety Council that safety helmets were one of the main ways of reducing accidents. He said there had been several times when men were hit on the head by falling objects and would have suffered injury except for the helmets.

The construction of the 40-story Secretariat Building presented an unusual problem in connection with falling objects, Mr. Redding said. The north and south walls are sheer marble for 500 feet, with no setbacks nor cornices, or even window openings. This required the evolution of a special type movable catch-all.

The joint venture of Fuller-Turner-Walsh Slattery, Inc., is building the United Nations Center. Three of the participating firms are members of The Associated General Contractors of America, Inc.

Milwaukee Begins Meetings

The Milwaukee Chapter, A.G.C., which has an enviable record in the accident prevention contest of The Associated General Contractors of America with 96 per cent of its members entered in the competition, has begun a series of safety meetings.

First of the series, conducted by the chapter's accident prevention committee in December, was attended by about 400 persons, and was very successful from the point of view of interest displayed, according to George A. Benish, chapter manager. The group was welcomed by President Arthur C. Wolff, and saw a colored slide film on "Gambling with Accident Prevention." A quiz program, complete with prizes, also was presented.

The chapter's accident prevention committee consists of O. Lupinski, chairman; Robert Hart, F. A. Khone, Fred Schelong, and Al Warring.

CONSTRUCTION SAFETY IN ACTION



E. S. Steel Photo

A safety net was employed below girders during steel erection on the Mystic River bridge between Boston and Chelsea, Massachusetts. Twice as long as the Brooklyn bridge and costing \$27,000,000, it is the same height above the water, 135 feet. It is 11,700 feet long from grade to grade, compared to the 8,981-foot length of the Golden Gate bridge.

About 50,000 tons of steel and more than 50,000 cubic yards of concrete went into the double-deck, three-lane structure, which will carry approximately 5,000 vehicles per hour. Toll gates on each level are located in the middle of the bridge.

Ohio Safety Film Planned

Contractors will assist the Industrial Commission of Ohio in producing a safety slide film for the construction industry, to be available at the beginning of the next construction season, according to *Ohio Public Works*, official publication of the Ohio Contractors Association.

Richard W. Morse, chairman of the commission, appointed the following construction men to a committee entrusted with the work:

Representing employees: Homer

On the subject of safety nets, the A.G.C. Manual of Accident Prevention states:

"Where it is not practicable to use temporary floors on structures, nets of Manila rope should be suspended below points where men are working more than 25 feet above the ground. Such nets should be made of at least one-half inch diameter Manila rope with three-quarter inch diameter borders and four by four inch mesh. The borders should be provided with loops so that they can be easily combined with each other, or securely attached to convenient points on the structural frame."

Davis of the Cleveland Construction Co., A.G.C., Cleveland; Erie Miller of the H. K. Ferguson Co., A.G.C., Cleveland; C. E. McKee, executive secretary of the Ohio High Chapter, A.G.C., Columbus; and Scott Kallenbach, Division of Safety and Hygiene, Industrial Commission of Ohio, Columbus.

Representing employees: C. J. Maher, Cleveland; Harry Proctor, Cincinnati; John E. Breidenbach, Dayton; and James H. Fluker, Division of Safety and Hygiene, Industrial Commission of Ohio.

Offers Comprehensive Accident Report

• BLS Tells Construction Industry Losses

» DURING 1948, 193,000 construction workers were injured, resulting in 2,700,000 man-days of lost time, according to final estimates of the U. S. Department of Labor's Bureau of Labor Statistics, which has been working a year on the project.

In the most comprehensive survey of its kind ever conducted in the industry, the bureau estimated that:

The injuries were equivalent to a wage loss of over \$26,000,000, "only part of which was covered by workmen's compensation payments."

Future losses arising from these same injuries will increase the cost by 23,000,000 more man days—\$228,000,000 at present wage values.

When employers' losses in terms of medical costs, property damage, and

other indirect costs are added, the total reaches \$770,000,000.

Of the 193,000, 2,100 were killed, 300 totally disabled for life, and 7,800 permanently impaired. The remaining 182,800 each lost at least one full day of work because of his injury.

Usable replies were received from 16,300 employers in the industry, of which 4,968 were general contractors. Of these, about 1,200, or roughly one-fourth, were members of The Associated General Contractors of America.

In the general contracting field, the highest ratio of injuries occurred in highway and street construction, the report said. This had an injury frequency rate of 43.3 disabling injuries per 1,000,000 employee-hours worked. The heavy and marine construction

rate was 39.2, and building construction, 39.0.

The highest incidence of injuries occurred in the specialty trade of wrecking and demolition work, which had an injury-frequency rate of 58.3.

Lowest rates were 15.9 for parquet and hardwood floor work; 19.2 for painting, paper hanging, and decorating; 19.4 for terrazzo, tile, marble, and mosaic work; and 20.0 for general building maintenance work.

Highest ratio of fatalities was 1.8 for every 1,000,000 employee-hours worked in the house moving trade. Structural steel work was 1.2.

Preliminary figures for the 1949 survey are 183,000 injuries, of which 2,100 were deaths (same as 1948), 300 were permanent disabilities (same as 1948), 7,300 were partial disabilities, and 173,300 were temporary injuries.

A table showing the BLS results follows:

Work injury rates in construction, 1948

Industry	Frequency rates for—				Severity		
	All disabling injuries	Death and permanent total disabilities	Permanent partial disabilities	Temporary total disabilities	Average number of days lost per—		
					Disabling injury	Temporary total disability	Severity rate ²
Total	36.7	4	1.5	34.8	135	14	5.0
General contractors	40.0	5	1.3	38.2	124	14	5.0
Building construction	39.0	4	1.1	37.5	101	13	3.9
Heavy and marine construction	39.2	6	1.5	37.1	148	15	5.8
Highway and street construction	43.3	6	1.3	41.4	126	13	5.5
Special trade contractors	32.1	4	1.7	30.0	154	15	5.0
Carpentering	34.3	3	2.2	31.8	135	13	4.6
Concrete work	28.2	3	7	27.2	136	17	3.8
Electrical work	21.2	4	9	19.9	204	15	4.3
Excavation and foundation work	31.3	1	1.5	29.7	89	14	2.8
General building maintenance	20.0	1.1	5	18.4	343	21	6.9
Glass and glazing	33.7		9	32.8	42	11	1.4
House moving	33.1	1.8	9	30.4	343	12	11.4
Installation of machinery and equipment, n. e. c.	46.7	3	8.7	37.7	161	14	7.5
Insulation work	32.7	2	8	31.7	61	13	2.0
Masonry and stone work	36.9	1	7	36.1	76	12	2.8
Ornamental iron and steel work	49.4	7	3.4	45.3	161	14	8.0
Painting, paper hanging and decorating	19.2	4	1.2	17.6	239	18	4.6
Parquet and hardwood flooring work	15.9	3	6	15.0	147	22	2.3
Plastering and lathing	39.0	2	1.0	37.8	82	13	3.2
Plumbing, heating and air conditioning	30.6	2	1.2	29.2	112	11	3.4
Roofing and sheet metal work	40.0	3	9	38.8	102	13	4.1
Structural steel work	52.4	1.2	4.5	46.7	293	21	15.4
Terrazzo, tile, marble, and mosaic work	19.4	3	1.0	18.1	205	13	4.0
Wrecking and demolition work	58.3	3	2.8	55.2	90	14	5.2

¹ The frequency rate is the average number of disabling injuries per million hours worked. A disabling injury is one that results in death, in permanent disability, or in an inability to work for at least one full day after the day of injury.

² The severity rate is the average number of days lost per thousand hours worked.

Nailability GIVES YOU Speed



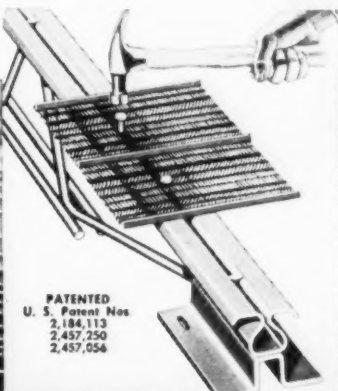
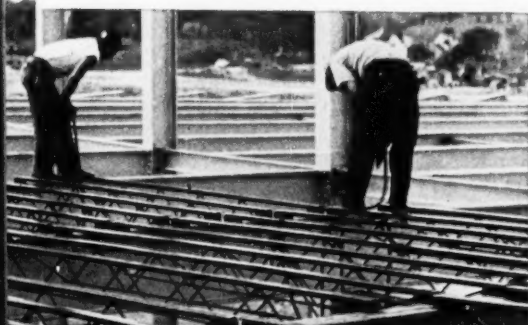
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A. G. C. ANNUAL REPORT

● To the 31st Convention, The Associated General Contractors of America, San Francisco

By H. E. Foreman, *Managing Director*

PURPOSE OF THE REPORT

The purpose of this report is to outline briefly the problems which have confronted the construction industry, and to give an account of the principal activities of The Associated General Contractors of America which have been of benefit to its members, the construction industry and the public.

The period of time covered is since the association's 30th Anniversary Convention which concluded in New York City on March 3, 1949. This period was the association's 31st year.

When the organization was founded on November 21, 1918, there were 97 members. By January 1, 1950, this number had grown to 5,511. The number of local or state-wide chapters and branches this year has increased to 119.

In 1918 there was little recognition of the construction industry or understanding of its volume of work or importance. During 1949 an industry recognized as the nation's second largest performed another record-breaking volume of work amounting to 11 per cent of the national product.

CONTINUED HIGH LEVEL OF CONSTRUCTION

A record volume of more than \$19,500,000,000 in new construction was put in place during 1949.

Of this, privately financed construction totaled more than \$14,000,000,000, and publicly financed projects about \$5,500,000,000.

There are prospects that during 1950 the total volume of new construction and maintenance and repair operations can approach \$30,000,000,000.

The long range prospects of the construction industry are essentially those of the United States itself.

As experience is demonstrating that all nations are economically interdependent, so is it becoming more evident that all business activities also are interdependent to a certain extent.

Ability to Produce. Much of the nation's future is related to its ability to continue to produce with increasing

efficiency. There was growing realization that its work is essential to the growth and development of the nation and its communities, and is the greatest single source of investment. This work is essential to the nation's ability to carry out its heavy international obligations. It is being done with increasing efficiency.

General Contractors. In construction, general contractors are the key figures which have the central responsibility for executing work at the site. The A.G.C. is the nation-wide association working toward development of conditions under which general contractors can operate at maximum efficiency. Its activities are directed toward helping the members in their daily operations.

There are prospects for a level of total construction activity approaching thirty billion dollars in 1950, and continuing at such a level for many years.

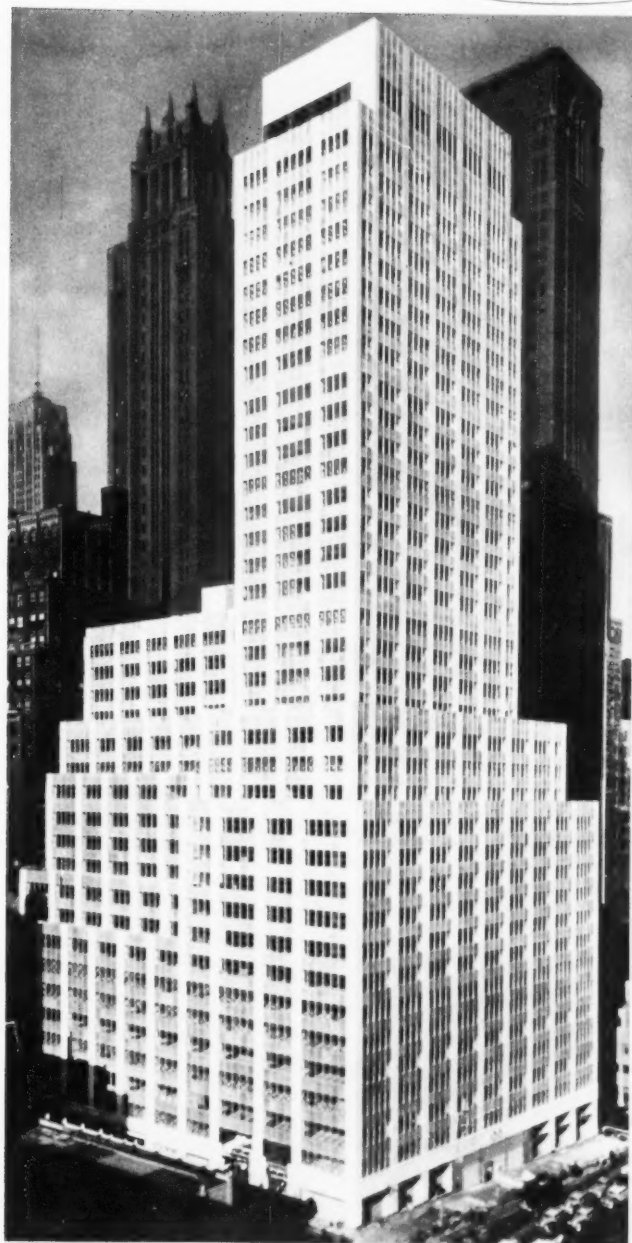
The association, locally and nationally, has a heavy responsibility to carry out its activities so that general contractors can continue to operate in such a way as to secure to the public increasing value for its investment in construction.

ing efficiency. Standards of living are increased by this ability to produce.

This ability is influenced by the development of better machinery and facilities; and use of improved methods through imaginative management, through cooperation of workers, and through cooperation of government.

The construction industry has made tremendous strides in recent years in developing greater efficiency and productive capacity. As was demonstrated dramatically during the war, the American construction industry has the greatest capacity and efficiency in the world.

As will be related in subsequent sections of this report, the A.G.C. has taken positive steps to help management of general contracting firms in the industry work for the development of improved machinery and methods; has taken steps to help secure the cooperation of workmen; and has represented contractors in relationships with the government.



Architects: Ely Jacques Kahn and R. A. Jacobs, New York
Contractor: George A. Fuller Company, New York
Structural Engineer: Fred N. Severud, New York

100 PARK AVENUE

Built for 100 Park Avenue, Inc., this recently completed 39-story office building fronts on Park Avenue, East 40th and East 41st Streets in midtown New York, and stands but a block from Grand Central Terminal, on the site of the famed Murray Hill Hotel.

Known as 100 Park Avenue, the L-shaped, air-conditioned giant contains 660,000 sq ft of rentable floor area. It is serviced by 20 elevators. It has setbacks at the 9th, 11th, 14th, 15th, 17th, and 21st floors, and an 18-story, 70 ft x 130 ft tower. Polished granite is used for its exterior base, and Georgia marble up to the second story level. The remainder of the structure is faced with white brick and aluminum spandrels.

Construction of 100 Park Avenue called for the fabrication and erection of approximately 10,000 tons of steel, all of which was handled by Bethlehem.

BETHLEHEM STEEL COMPANY
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Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation*



FABRICATED STEEL CONSTRUCTION

THE CONSTRUCTOR, MARCH 1950

PERIOD OF INTENSE COMPETITION

The outstanding characteristic of the contracting industry today is the exceptionally keen competition between general contractors.

Throughout 1949 competition seemed to become increasingly intense between general contractors for the new work coming on the market.

Responses to a survey made earlier this month among directors and chapters of the association indicated that during recent months the competition had become so intense that it frequently was described by such extremes as suicidal. It seemed not unusual for there to be more than 20 bids for a single project.

One result of this has been that public agencies and private groups awarding contracts have secured very favorable prices.

Replies to the survey indicated that another result may be the failure of some general contractors which have bid for work at less than cost. Firms without sufficient experience to accurately estimate their costs in advance may be eliminated by this competition.

The directors and chapter managers reported generally that competition between sellers of construction materials and equipment was increasing.

Costs Stabilized. It was reported, generally, that prices had stabilized at from 10 to 15 per cent below the peak of late 1948, and that there would be no radical changes immediately.

The long-range price trend in the construction industry appears to be similar to the national trend. As wage increases and inflationary trends continue, there is the tendency for prices to increase. At the same time, management will continue to seek better machinery and more efficient methods to cut costs.

Predictions of the conditions under which the industry will operate in the future cannot be made accurately because of uncertainty of how much strikes in other industries will impede production; of the general trend of wage rates and prices throughout the economy; of governmental actions which could handicap business operations; and international developments.

ASSOCIATION IN STRONG CONDITION

The association, locally and nationally, is in its strongest condition in history to carry out work of benefit to its members, the industry and the public.

On January 1 a total of 5,511 memberships were held in the national association. This was a net gain of 502 during 1949. It was a gain of 2,330 during the past five years.

Work of National Association. During the past year the national association took positive steps to:

- Develop and preserve legitimate markets for general contractors.
- Cooperate with other groups to improve contract documents, administrative procedures, specifications and design for more economical construction operations.
- Improve relations with construction workmen and their representatives, and eliminate work stoppages caused by jurisdictional disputes.
- Improve construction equipment through cooperation with manufacturers and distributors.
- Improve the relationships of general contractors with other groups in the industry through national cooperative committees.
- Maintain relationships with governmental agencies supervising construction programs or otherwise taking actions affecting construction.
- Represent the general contracting industry in its relations with Congress.

- Assist in the national defense planning by presenting information to government agencies on how general contractors can cooperate most effectively.

- Serve as the spokesman on a national scale for the general contracting industry in its relations with the general public.

- Keep the membership more completely informed of industry news and association activities through the newly established *National News Letter*, the reorganization of *The Constructor*, and the bulletin service.

- Give greater impetus to its 25-year-old safety program through publication of the revised *Manual of Accident Prevention in Construction*.

- Improve all of its services to its members.

Program Executed. The program of activities adopted by the annual convention last year has been executed vigorously. The association is operating within the budget adopted.

The Governing and Advisory Boards met in French Lick, Indiana, September 12 to 14, to review the program and recommend additional activities. The Executive Committee held additional two-day meetings in April, July and December to thoroughly review progress toward association objectives.

Representatives of the national headquarters have been in contact almost daily by telephone with President

Adolph Teichert, Jr., Vice President Walter L. Conse, Secretary-Treasurer William Muirhead, or with directors or committee chairmen for consultation on association business.

Provisions were made during the year for more frequent visits to the chapters and branches by representatives of the national association.

Study has been given to the need for revising the

association's Governing Provisions, and the possible desirability of making changes in the membership districts because of the association's growth.

Membership in the A.G.C. now more than ever, brings prestige to the general contractor who displays his emblem, which signifies that he has skill, integrity and responsibility in his own organization and vigorous national and local associations helping him to serve the public better.

CHAPTERS AND BRANCHES GAIN STRENGTH

The fact that two-thirds of the chapters and branches gained in membership during the year, a number of them substantially, is one measure of the increasing effectiveness of their work.

Six new chapters were added to the association during 1949, and two more have been added this year, making a total of 110. This is a gain of 18 during the past five years.

Many of the chapters have now reached the point where nearly all of the responsible contractors in their areas are A.G.C. members.

Negotiations are being carried on which are likely to result in the addition of new chapters during the year.

Programs at the annual meetings of the chapters and branches have revealed that they are carrying on a larger volume of more effective work than ever before.

The work of the A.G.C. Secretaries' and Managers' Council, and its meetings before conventions and board

meetings, has reached a point where the council is an important factor in successful chapter management and continued success of the A.G.C.

During the year it was possible for the national association to have more representatives visit with the chapters, and this activity will be expanded as rapidly as possible.

Presidents' Meeting. At the last convention the practice was re-established of holding a breakfast for presidents of the chapters and the national association. A similar breakfast will be held this year.

During the summer, chapters in Chicago, Detroit, Lansing, Michigan; Cleveland, Buffalo, Boston and New York cooperated with A.I.A. chapters in demonstrating American construction methods to a British productivity team.

Study has been given to the feasibility of a retirement plan for staffs of the chapters and the national association. A report will be made to this convention.

MAXIMUM EFFICIENCY GAINED THROUGH CENTRALIZED RESPONSIBILITY

Experience has demonstrated that maximum efficiency in construction requires that responsibility for execution of work at the site be centralized in competent and reputable general contractors.

A fundamental activity of the A.G.C. has been to help develop and preserve legitimate markets for general contractors, and conditions which permit them to carry out their work most economically.

This year some specialty contractor groups have undertaken programs to encourage the award of separate contracts. These may have been undertaken as a result of the highly competitive condition in the industry. Material has been prepared on this subject by the national association for study by this convention.

Day Labor. During the past year the association was successful in recommending to Congress that restric-

tions be continued on the day labor operations of the Bureau of Reclamation.

Explorations were made with other agencies of the federal government of the types of work on which general contractors could bid. During the year, general contractors had their first opportunity to bid on additional classes of revetment work on the Mississippi River, and contracts were awarded.

A survey was made of state highway department policies and state laws relating to day labor and contract award policies. Many of the chapters were able to work for improvement of state policies.

Continued use was made by the chapters and the national association of the booklet, *The Contract Method of Construction Safeguards Public Funds*. An advertisement based on the booklet was published in seven magazines of national circulation during the fall calling this information to the attention of the public.

CLEAR CONTRACTS, SPECIFICATIONS, PROCEDURES LEAD TO INCREASED EFFICIENCY

The A.G.C. is conducting a broad program for the improvement of contract documents and administrative procedures which will benefit all parties concerned in construction contracts.

The principle underlying the program is that construction can be executed more efficiently if contracts, specifications, design, bidding and awarding practices, and administrative procedures are as clear and definite as possible, fair to all parties, and thoroughly understood.

Last fall, the Governing and Advisory Boards authorized the reorganization and renaming of the former specifications committee as the Committee on Contract Forms and Specifications.

As now constituted, the committee has three subcommittees: Private architectural contract forms; private engineering contract forms; and standard government construction contract.

It also has five task units: Reclamation, Corps of Engineers, Bureau of Yards and Docks, building, and highway specifications.

Federal Contract. Intensive work has been done during the year on revising the U. S. Government Standard Form No. 23, for construction contracts. A revised draft was released in October by the Construction Contract Drafting Subcommittee of the Federal Standard Contracts Committee. This subcommittee had held weekly meetings for almost a year.

Representatives of the national association had been in contact with the committee and had submitted recommendations for improvements, particularly with reference to compensation for delays caused by the government.

In October, Administrator Jess Larson of the General Services Administration invited the Public Works Construction Advisory Committee to the agency to study this contract form. A special subcommittee was appointed, consisting of representatives of the A.G.C., The American Institute of Architects, American Society of Civil Engineers, and American Society of Mechanical Engineers. The managing director was appointed chairman of the subcommittee.

These representatives, with their legal counsel, have made an exhaustive study of the contract. The recommendations were presented to a meeting of government officials called by the administrator on February 8.

Industry and government representatives are expected to study the record of the meeting, prepare supplements to previous presentations, and to hold additional joint meetings in the future.

Procurement Regulations. Conferences have been held, and the association will have an opportunity to review and make recommendations, on revisions to the armed services procurement regulations relating to construction when the redrafting takes place.

Last June, a conference was held by the A.G.C. Corps of Engineers Task Unit with representatives of the Corps on engineer specifications. Since that time there have been further exchanges of view. Agreement has been reached on a number of points, while others are still under study.

The Bureau of Reclamation has made changes in specifications following recommendations by the association.

Joint Cooperative Committee Recommendations. In the building field, committees of the A.G.C. and The American Institute of Architects are studying the A.I.A. cost-plus-a-fixed-fee standard form of contract for ambiguous or undesirable provisions. It is planned to republish the document with A.I.A. and A.G.C. endorsement, as was done with the A.I.A. lump-sum contract form.

The revisions to the booklet, *A Suggested Guide to Bidding Procedure*, have been published following approval by the A.I.A. and A.G.C.

The Joint Cooperative Committee of the American Society of Civil Engineers and the A.G.C. is reviewing the Standard Contract for Engineering Construction for possible revision and republication.

Regulations of the Civil Aeronautics Administration were revised last year along lines recommended by the Joint Cooperative Committee of the National Association of State Aviation Officials and the A.G.C.

Last spring, an extensive report was given by the A.G.C. to the special committee of the American Association of State Highway Officials drafting proposed General Provisions for Highway Construction Contracts. These provisions will serve as guides to state highway departments.

INCREASED EFFICIENCY THROUGH IMPROVED MACHINERY

The production of more efficient machinery by the manufacturers, the better servicing of it by the distributors, and the development of more economical construction methods by general contractors, all offer important possibilities for improvements in construction operations.

The A.G.C. is taking positive steps to help develop these possibilities in cooperation with other groups in the industry.

Plans were made at the meeting of the Joint Co-operative Committee of the A.G.C. and the Construction Industry Manufacturers Association, held last month in Chicago, for the A.G.C. to gather from its members their ideas for the development of new machines, for improvement of current equipment, and for additional uses of the machinery now manufactured.

These ideas will be correlated by the A.G.C. national office, studied by committees, and submitted to the members of both organizations. This provides A.G.C. members with the opportunity to make suggestions for better machinery with which to carry out their work.

Standardization. Important work on the standardization of sizes and improvement of machinery has been carried on for a number of years by the Mixer Manufacturers' Bureau and the Contractors' Pump Bureau, both affiliated with the A.G.C.

The mixer bureau, which includes representatives of the principal manufacturers of concrete mixers and pavers, recently held its 26th annual meeting. Through its program of the standardization of sizes and capacities, the manufacturers have been able to concentrate on the production of better mixers, and contractors have been able to know exactly the capacities of the machines which have been produced.

The pump bureau, which includes representatives of the principal manufacturers of contractors' pumps, recently held its 11th annual meeting. Its program has had similar benefits for manufacturers and contractors.

Equipment Servicing. Through the Joint Co-operative Committee of the A.G.C. and Associated Equipment Distributors, work has been completed which helps toward better servicing of equipment and cutting down of idle time.

Following a discussion of ideas, the A.E.D. prepared a check list for ordering repair parts which eliminates many possibilities of error, and a handbook, *Proposals for Standardization and Improvement of Repair Parts*. Many of the manufacturers are expected to follow the suggestions for improvement of new editions of their repair parts books.

The association has representation on the Highway Research Board and its Committee on the Economics of Highway Construction and Maintenance Methods. This committee has been studying operating times of various types of equipment on highway work, and the association has been distributing the publications to members.

Equipment Ownership Expense Manual. Last summer the association published the revised *Contractors' Equipment Ownership Expense* manual. The demand required a second printing. This document is a compilation of data on the average costs to general contractors of owning and operating the various kinds of construction machinery and equipment, and is of use to a contractor in figuring his actual costs. Nearly 1,400 items were added which had not been included in previous editions.

RELATIONS WITH LABOR

The relations of construction employers and their workmen constitute one of the most important factors contributing to efficiency and speed in construction operations.

The relations of general contractors with their employees during the past year were made more difficult because of the following factors:

1. The lack of guideposts—to the social, economic and political objectives of the nation.
2. Uncertainty as to the degree of further inflation.
3. The lack of a government labor policy, with the Labor Management Relations Act the subject of repeal

efforts by both the administration and labor unions and a major issue between the two political parties.

4. Uncertainty as to the extent to which the government will rule that pension funds and other fringe issues are the subject for collective bargaining in the construction industry.

5. Demands for wage increases and welfare benefits at a time when there is a high level of employment in the industry and the opportunity for employment throughout the year.

In spite of these factors the construction industry completed a record volume of work last year with a marked increase in economy of operations.



CHAMPION

the NEW



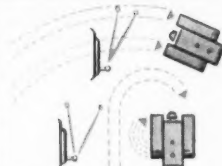
Positive all-weather starting on gasoline, with quick change-over to full diesel operation, all from the seat.



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Separate reverse lever for quick change of direction. The tractor moves in the direction the lever is moved.



Planet Power steering pivots turns with power on both tracks. Feathered turns and pivot turns at your fingertips.

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Cut waste shifting time out of work cycles, provide the best speed for every operation. 8 speeds in each direction!



Work on grades up to 100%. Its power, ground contact, balance and lubrication are right for licking any grade.



Handle heaviest loads on gradual turns as easily as straightaway because both tracks are powered in the turn!



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"Here is the Champion of Crawlers," owners will tell you, "the tractor that will pull down your dirt moving costs."

Contractors and operators who have observed or operated the new International TD-24 diesel crawler are spreading the news. Here is a tractor that out-works and out-performs every other crawler known to the industry!

Operators compete with each other from Florida to Alaska to get "the big red devils," the TD-24's, assigned to them. They'll tell you no other tractor can compare with the TD-24 for ease of operation or work capacity!

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INTERNATIONAL TD-24

Comfortable to ride, powerful, fast, safe and economical to operate, the TD-24 is revolutionizing ideas of what crawler tractors can or cannot do on the big jobs.

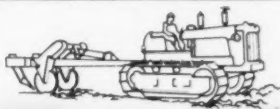
Regardless of what equipment you now use, visit your International Industrial Power Distributor and get a TD-24 demonstration. See for yourself what the TD-24 can mean to your operations in shortened time, reduced costs, extra profits.

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Tune in "Harvest of Stars" with James Melton, Sundays, N. B. C.



The labor relations activities of the association have been directed toward clearing the uncertainties which have prevailed.

Jurisdictional Board. The association has continued to work toward avoidance of work stoppages caused by jurisdictional disputes through its participation in the National Joint Board for the Settlement of Jurisdictional Disputes.

During the first six months of 1949, the board continued under its original plan until terminated by withdrawal of the Building and Construction Trades Department of the American Federation of Labor. After it became apparent that the Taft Hartley Act would not be repealed by Congress, the board was re-established at the request of the department.

Subsequently, important changes were made in the procedures for handling disputes and making decisions. Experiences to date indicate that the changes have been beneficial. Such work stoppages as have occurred and been reported to the board have been of brief duration.

Administration of Act. Administration of the Labor Management Relations Act in the construction industry has been one of the knottiest problems to be faced by the National Labor Relations Board, employers and unions.

When it became evident that no changes would be made in the law during the year, it became more obvious that some steps should be taken to give the N.L.R.B. a more correct understanding of bargaining procedures in the construction industry.

A number of decisions were being made, relating to other industries, which were setting precedents that would be extremely harmful to negotiations in the construction industry if the precedents should be applied there. Study of the act also indicated that legal procedures, not detrimental to construction employers or unions, could be adopted for application to this industry.

Some of the precedents being established by decisions relating to other industries would have construed legal bargaining procedures as illegal and subjected construction employers to heavy penalties if applied to the construction industry. Most of the difficulties arose from the inability to hold representation elections in the construction industry under average conditions, or elections to determine if union security provisions could be embodied in agreements.

For these reasons representatives of the association who had served on the employers' committee negotiating establishment of the jurisdictional board joined with other employer committee members in filing a

statement with the N.L.R.B. at the time one was filed by the Building and Construction Trades Department.

This statement asked N.L.R.B. recognition of the hiring procedures of this industry, described the necessity for bargaining with unions before the craft is employed at the site, asked for realistic procedures to give protection to employers in carrying out negotiations when elections cannot be held, and requested procedures to protect employers from charges of discrimination in hiring or firing of employees where no discrimination charges would have been valid if the N.L.R.B. could have held elections.

In order to correct some misunderstandings, it should be emphasized that there was no suggestion that the industry be exempt from any part of the act, that elections should not be held in cases where they are possible, or that a closed shop be authorized.

When this report was written the N.L.R.B. had these recommendations under consideration. The general counsel has announced that it will not be the policy of his office to initiate charges of violation under certain circumstances which he has outlined. Thus a foundation was laid for the defense of contractors charged with discrimination based solely on the lack of an impossible election.

Wage-Hour Law. Early in the year a Supreme Court decision in what has been referred to as the overtime-on-overtime case brought serious difficulties to the industry. The A.G.C., with shipping employer representatives, obtained Department of Labor support to an amendment of the Fair Labor Standards Act to overcome the difficulties. Congress passed an amendment providing relief.

Later in the session Congress increased the minimum wage to 75 cents per hour, again included overtime-on-overtime relief, and made other amendments, the full effect of which have not yet been determined for the construction industry.

The association has sought interpretations of these amendments from the Wage and Hour Administrator, and has distributed to members regulations dealing with some of the amendments.

Wage Negotiations. The association has given assistance when requested to chapters in their negotiations and settlement of disputes. It has continued its periodic surveys of wage rates, overtime, other working conditions and the supply of labor in more than 80 areas to provide the chapters with useful information in their bargaining.



HOW TO PAVE A MILE A DAY!

Last summer the City of Baltimore, Maryland found it necessary to repave 14 blocks of busy Baltimore Street and awarded the contract to P. Flanigan & Sons Co., Inc. When the city fathers expressed concern over interruption to traffic while work was in progress on this vital city artery, there occurred an outstanding example of what can happen when civic minded contractors get together. The Flanigans conferred with six of Baltimore's leading contractors with the result that, on a single work-packed Sunday, all seven contractors combined to pave fourteen city blocks. Over a mile in length, the work took place between Fremont Avenue and Calvert Street. Twenty-five thousand square yards of asphaltic binder and topping were put down in sixteen hours of continuous operation. With the exception of the motor trucks needed to haul surfacing materials, more rollers were required than any other

type of equipment on the job. Of the eighteen tandems employed, twelve were Buffalo-Springfields. This heavy Buffalo-Springfield preference is best expressed in the words of Mr. Pierce Flanigan:

"On a job like this, dependability is what counts and that's why we've used Buffalo-Springfield Rollers exclusively for the past forty-odd years. Our operators like them and we appreciate their low operating and maintenance costs."

Preference based on actual field experience is predominantly a Buffalo-Springfield success story—and one worth remembering when determining your roller needs for the work ahead. Your nearest distributor will be happy to tell you about the many exclusive features of the Buffalo-Springfield Heavy Duty Tandems—features that will help you in trimming costs and increasing production on all your jobs. Why not see him today?

PLAN OF WORK

National Paving & Contracting,
Fremont to Pine Street
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Mahoney Brothers,
Pearl to Paca Street
Potts & Callahan,
Paca to Howard Street
American Paving & Contracting,
Howard to Sharp Street
P. Flanigan, Sharp to Charles Street
Arundel Construction,
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BILL OF EQUIPMENT

7 asphalt mixing plants
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*18 rollers (8 to 12 tons)
9 air compressors
7 asphalt spray machines
105 motor trucks

*12 of 18 rollers used on record breaking project in Baltimore were Buffalo-Springfields.



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"Out-hauls" CRAWLER-SCRAPER



Noel Brothers REPORT COST-CUTTING ADVANTAGES OF THEIR "D" ROADSTER

"We had always considered Tournapulls as being economical only on long hauls," says Mr. O. K. Noel, of Noel Brothers, Greenville, Tennessee contractors. "But *our eyes were certainly opened* on the New Planters Tobacco Warehouse job at Greenville. Filling in between foundation walls and supporting columns made this job doubly difficult. We found that our D Roadster is out-hauling our 144 h.p. tractor and LP Carryall in the restricted loading and dumping area on this

job. The oversize air brakes and positive steer on our D Roadster enables us to haul at high speed in tight places."

Noel further reports that, according to *very accurate cost and time studies* being kept on the Greenville job, their 7-yd., rubber-tired D Roadster is consistently moving 24 more yards per hour than their other units . . . and is moving it 20% cheaper!

Only 1 mechanical delay in 3 months of operation

Although Noel Brothers have kept their 25 m.p.h. "D" running on a heavy work schedule, there has been only one mechanical delay in three months of continual Roadster operation. The high-speed "D" has handled several other small-yardage grading jobs for them, including another tobacco warehouse site near Abingdon, Virginia.



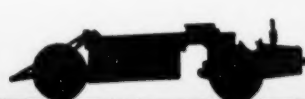
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"Another advantage... saves 30% on moving costs"

On this type of work, where their equipment must be moved frequently from one job location to the next, O. K. Noel says . . . "Another great advantage is the savings on moving costs." By driving the 25 m.p.h., rubber-tired "D" over the highway from job-to-job, he estimates they save approximately 30%, compared to the cost of transporting their crawler-scraper outfit by trailer.

You, too, will find lower costs in the D Roadster's 25 m.p.h. speed . . . economical application on short, medium and long hauls . . . 100% mobility on rubber tires . . . and ability to self-load, or work profitably in fleet operation with a pusher. Get all the facts on this one-man construction gang right away. Ask your local LeTourneau Distributor TODAY for more facts . . . he's ready to show you how the D Roadster can reduce your dirtmoving costs.

While a pusher is recommended for the Roadster in hard digging, O. K. Noel reports "The ability of our Roadster to self-load in this extremely hard material is amazing."



With positive, electric power steer and 90° turning ability, Noel's "D" easily maneuvered around walls and columns on foundation fill for the Greeneville, Tenn., warehouse.

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TOURNAPULLS

MORE WORK PER HOUR WITH RUBBER-TIRED POWER

Davis-Bacon Determinations. The predetermination by the Secretary of Labor of prevailing wage rates has been extended as government subsidies have been granted to hospital, airport and two types of housing construction.

Because of the importance of these determinations on wage rates in the areas, the association has continued to send to chapters in each state, notice of requests for determinations and of the determinations made. This enables chapters to send accurate information to the Labor Department so that rates are not determined improperly.

The Mid-Year Board Meeting adopted a resolution condemning practices of federal agencies which disrupt normal collective bargaining procedures in the industry and which establish wage rates higher than those actually prevailing in the area. Copies of the resolution were sent to all agencies concerned, and conferences subsequently were held in Washington and with the TVA at Knoxville.

The membership was kept informed of labor develop-

ments in the industry on a national basis through bulletins and by direct contacts with chapters.

Apprentice Training. Training new craftsmen for the industry continues as an important activity. The principal development in the past few years in apprentice training has been the establishment of local joint apprenticeship committees.

More than 3,200 committees have been established throughout the country. At the latest count, approximately 117,000 men were being trained as apprentices in the building field. Many others were being trained by highway and heavy contractors outside formal apprentice programs.

The principal training of apprentices is through the local joint committees. One of the best developments for encouragement and recognition of apprentice training is graduation banquets. The A.G.C. has been represented at a number of these. The association is represented on all principal committees in the apprenticeship field.

SAFETY MEASURES PREVENT COSTLY WASTE

Estimates have been made that up to \$500,000,000 could be saved annually in the construction industry if half of the accidents were prevented. Fifty per cent of accidents are preventable.

The A.G.C. for more than a quarter of a century has taken steps to assist contractors in carrying out safety measures more vigorously. Experience has demonstrated that safety measures are an investment which pays dividends.

Last year the President's Industrial Safety Conference, held in Washington in the spring, was attended by thousands of industry, labor and government representatives from all parts of the country. The A.G.C. was represented.

From this conference, and subsequent governors' industrial safety conferences in various states, has developed a growing movement for passage of federal and state legislation to require specified safety measures by law. It seems obvious that, unless safety measures are applied voluntarily, the pressure for mandatory legislation will increase.

An important question is raised as to which can be operated more effectively and economically, the voluntary or mandatory programs.

Previous work of the association and member firms has been directed principally to planning safe operations on the job and to education of the supervisory force. Consideration might be given to what the asso-

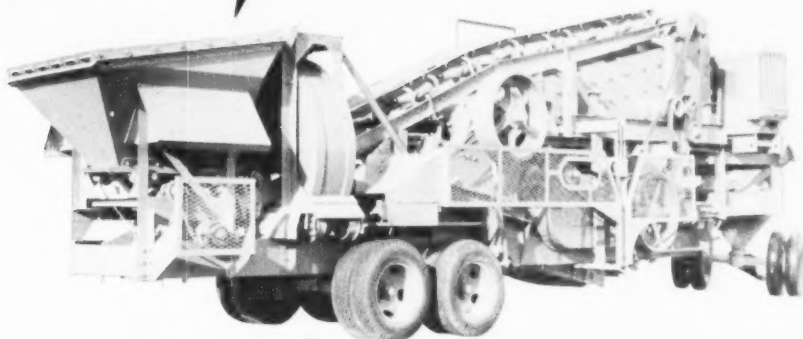
ciation should do to help employers develop programs for the training of workmen in safe operations.

Accident Prevention Manual. Last August the third revised edition of the *Manual of Accident Prevention in Construction* was published. This was a complete revision and modernization of the standard manual since 1927 for safe practices in construction. The purpose of its 256 pages and 100 illustrations is to suggest in a simplified manner how to have safety on the job. It was dedicated to the superintendents and foremen in the industry. More than a year was spent in its preparation.

Safety Contests. Interest in accident prevention by association members has increased during the year. One evidence is that 43 per cent more members finished in the contests sponsored by the association which closed last fall than in the previous year. Awards will be presented to the winners at this convention.

A new award will be presented this year, in addition to the usual awards for winners in the building, highway, and heavy construction and railroad contractors divisions. This will be awarded to the companies with the best safety record for the past ten years.

Also, a new award will be presented to the manager whose chapter was most active in safety work, as well as the usual awards for chapters with the highest percentage of members finishing in the contests.



CONDENSED SPECIFICATIONS

- 1024 or 1036 Roller Bearing Jaw Crusher.
- 2416 Roller Bearing Star Gear Drive Roll Crusher.
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- 24' Wide Conveyors. Sealed-for-life bearings.
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- Sand removal standard. Conveyor optional.
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CAPACITY—60–90 yards per hour—1" based on 25% crushing with 1024 jaw crusher. For more than 25% crush, the 1036 is recommended.

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UNIVERSAL'S "Scalping Deck" method of screening assures more effective screening, faster material flow. The heavy top "scalping deck" protects the finish deck from materials too large for the rolls and permits the lower screening area to be fully utilized. The screen is mounted at an incline giving faster separation for higher capacity, better gradation for meeting the most exacting specifications. No screenable material is carried over to choke the crushers. Material too large for the rolls is scalped to the jaw crusher. Only sized material goes to the rolls. This means greater capacity, less jaw and roll wear, lower horsepower requirements.

Only UNIVERSAL offers the superior advantages of "Stream-Flo" Engineering to give you more for your money in performance, in economy... in more tons per hour at less cost per ton. With all their extra value you don't pay a premium for a UNIVERSAL Gravelmaster. Made in 4 sizes with capacities up to 200 yards of 1" per hour. Investigate now. Write for complete details.

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During the year material was assembled for use in establishment of chapter accident prevention programs. A simplified procedure also was developed for conduct of chapter accident prevention contests in connection with the national contests.

A number of representatives of member companies,

chapters and the national association are active on committees of the Construction Section of the National Safety Council and have taken part in its work. The question has arisen whether the association should take a still more active part in the council's work. During the past year there has been a marked increase in the number of union representatives joining this section of the council.

BUILDING CONSTRUCTION

The prospects for 1950 in building construction are a sustained high level of activity, if somewhat less than last year. Competition is expected to remain keen.

The matter of principal interest and concern to building contractors has been, and is, the trend toward the award of separate contracts for the mechanical installations of a structure, and the drives which have been initiated by national subcontractor organizations to encourage legislation for the award of separate contracts.

The Heating, Piping and Air Conditioning Contractors National Association has recommended that its chapters and members encourage state, and subsequently federal, legislation to require the awarding of separate contracts for heating and air conditioning, plumbing and electrical work.

The National Electrical Contractors Association earlier this year published a booklet explaining the reasons for their advocating the award of separate contracts at times when general contractors do not deal fairly with their subcontractors.

Section 3 of the A.G.C. Code of Ethical Conduct sets forth the principles which have been adopted for relationships with subcontractors and materials suppliers.

The staff has prepared information which will be presented to the Building Contractors' Division on this subject.

Joint Cooperative Committee. Work with the National Joint Cooperative Committee of the A.G.C. and The American Institute of Architects continues to be an important part of the building division's work. Actions and recommendations of the committee which will be reported to the convention include:

- A strong statement advocating the use of one over-all general contract for building construction, rather than the award of separate contracts.
- A review by the two associations of the present insurance provisions of A.I.A. standard contract documents.

- Amendments to appropriate provisions in A.I.A. contract documents to more clearly define and fix the responsibility of the architect.

- Revisions of A.I.A. standard contract documents to provide a more equitable procedure for terminating the contract by the owner.

Last fall, upon recommendation of the cooperative committee, copies of the A.G.C. Code of Ethical Conduct were sent to all members of the A.I.A., and the A.I.A. Standards of Professional Practice were sent to A.G.C. building contractors.

The association's subcommittee on private architectural contract forms is reviewing with the A.I.A. the A.I.A. standard cost-plus-a-fixed-fee contract form for possible revision and republication with A.G.C. endorsement.

A special committee appointed to study revision of the A.G.C. standard construction service contract is completing work on a contract manual which will explain the particular merits of the principal types of contracts in use.

Revisions to the booklet, *A Suggested Guide to Bidding Procedure*, were approved by the Governing Board last September and have now been published following A.I.A. approval.

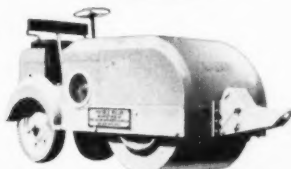
Conferences have been held with national and regional representatives of the United States Public Health Service and state hospital officials to present information on the A.G.C., the functions of general contractors, and bidding and awarding practices pertinent to the federal aid hospital construction program. Conferences also have been held with the Veterans' Administration on policies of that agency's hospital construction program.

B.R.A.B. The association is supporting the Building Research Advisory Board of the National Research Council. Purpose of the board is to stimulate, correlate, and disseminate information on research related to building construction. An executive secretary has been appointed and the board has started work. Two A.G.C. representatives are members of the board.

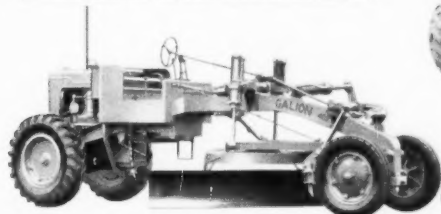
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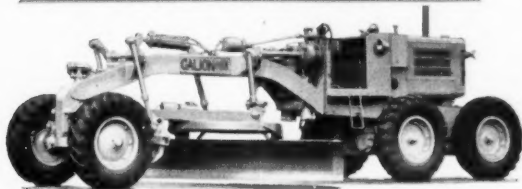
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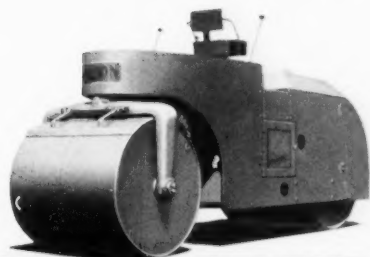
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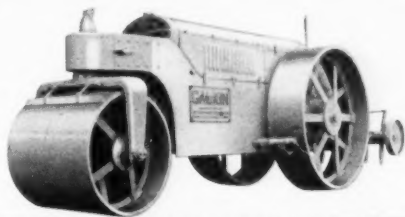
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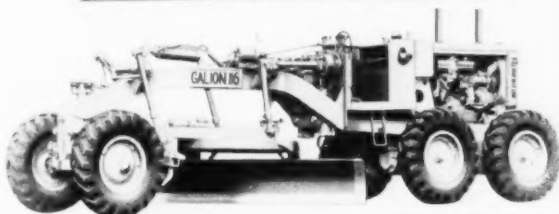
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HIGHWAY AND AIRPORT CONSTRUCTION

Safer automotive transportation and increasing traffic demands require a substantial increase in the annual volume of highway construction.

Work put in place for all units of government during 1949 is estimated by the Bureau of Public Roads at \$1,705,000,000. The estimate for 1950 is \$1,900,000,000.

State highway departments last year awarded contracts totaling \$1,187,000,000 for 45,563 miles of highways.

Reports of the B.P.R. during 1949 indicate that approximately \$50,000,000,000 of all types of highway construction is needed in the United States. Estimates have been made by highway engineers that the rate of construction should be increased to about \$4,000,000,000 annually for all types of highways, roads and streets.

Last summer the B.P.R. released its report, *Highway Needs of the National Defense*, which reported the need for \$11,300,000,000 expenditures on the 37,800 miles of the strategic Interstate Highway System. It recommended that for work on this system the federal government pay 75 per cent of the costs, and the states pay 25 per cent.

At a special meeting in December the American Association of State Highway Officials recommended an \$810,000,000 annual federal aid highway program.

It will be necessary for Congress to enact new federal-aid highway authorization legislation at this session because the current bill expires June 30.

The association will present testimony before Congressional committees on the capacity of highway contractors to execute an expanded construction program economically and rapidly.

Efforts to increase authorizations for rural roads can be expected at the next session of Congress. The association last year testified on the advisability of having contracts for such work awarded by state highway departments and the work executed by contract.

In order to explain to the public the need for increased highway appropriations, or increased gasoline taxes, a number of the state highway departments have established or expanded public relations departments to conduct educational programs. A.G.C. chapters and highway contractors can be of assistance to the departments in this work.

Competition has become increasingly keen among highway contractors and there has been a marked increase in the number of bids received at lettings. The

Bureau of Public Roads composite mile cost index shows that in the last quarter there was a 12 per cent drop in costs below the peak in the last quarter of 1948.

Joint Cooperative Committee. Meetings of the Joint Cooperative Committee of the A.G.C. and the American Association of State Highway Officials, and the opportunities these have afforded for regional discussions of mutual problems by contractors and officials, has continued to be an important part of the Highway Contractors' Division program.

Meetings have been held of the committee in connection with annual convention of the A.G.C. and A.A.S.H.O., and annual meetings of highway officials of the Mississippi Valley Conference, Western Association, Southeastern Association, and North Atlantic States.

Many of the A.G.C. chapters have established similar committees with their state highway departments.

The discussions of contract documents, bidding and awarding procedures, specifications, and design have developed many suggestions which have been put into effect and daily are saving the public money in highway construction.

Long-range Planning. During the past year many states, in cooperation with the Automotive Safety Foundation or other groups, have completed long range plans for their construction programs after extensive studies. These studies are revealing the value to the states of such advance planning.

Airport Construction. The principal lag in the federal-aid airport construction program has come through the delay in states and communities in raising the matching funds required.

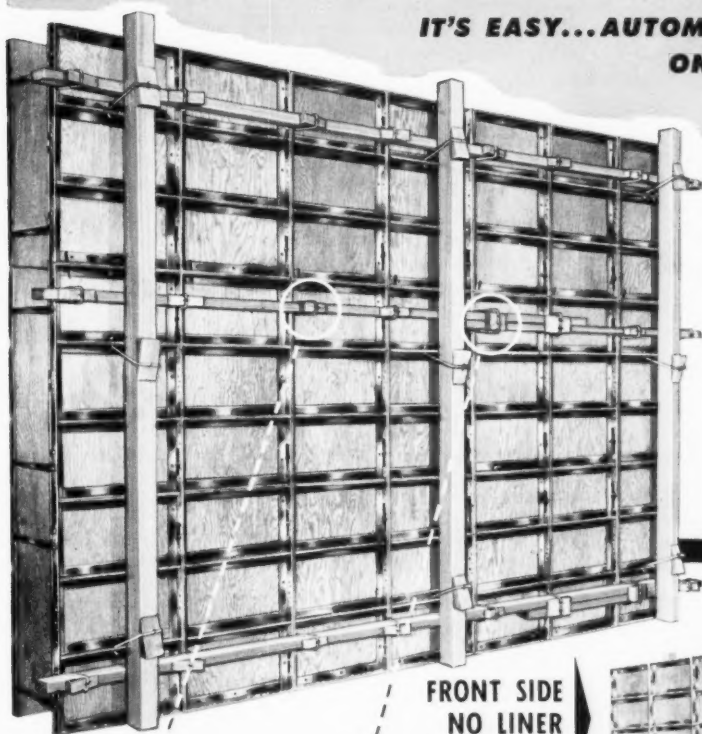
Regulations of the Civil Aeronautics Administration last year were revised to include improvements recommended by the Joint Cooperative Committee of the A.G.C. and the National Association of State Aviation Officials.

This committee met last year at the time of the A.G.C. annual convention and in the summer at Mackinac Island at a meeting of the Board of Directors of the N.A.S.A.O. Another meeting will be held during this convention.

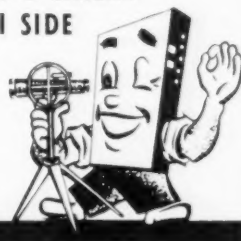
During the year, opportunities for general contractors to participate in their construction programs were explored further with the Rural Electrification Administration and the Soil Conservation Service.

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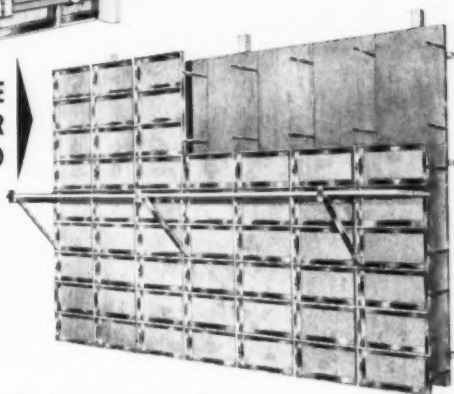
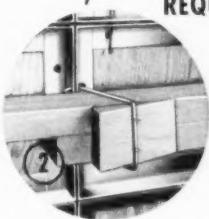
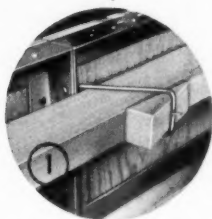
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HEAVY AND RAILROAD CONSTRUCTION

Approximately one-third of the estimated 1950 volume of new construction will be the type of projects undertaken by heavy construction and railroad contractors.

The \$6,500,000,000 market is expected to be approximately the same as last year, with federal, state, and municipal public works increasing, and most privately financed construction curtailing except for gas companies.

Pipeline construction is moving ahead at a rate that undoubtedly will set a new record during 1950.

Costs generally appear to have stabilized in the vicinity of 10 per cent below the peak of 1948. Competition has become keener, with much of the bidding below engineers' estimates.

The Corps of Engineers has found its pre-bidding conferences at the site with prospective bidders so valuable to both the Corps and the bidders that the practice is being followed more frequently.

Last year, following conferences held with A.G.C. representatives, the Corps of Engineers provided contractors with the first opportunity to bid for construction of articulated concrete revetments on the Mississippi River. Previously the work had been done exclusively by government force account.

During the last session of Congress, the A.G.C. was successful in demonstrating the need for continuation of legislative limitations on volume of force account work by the Bureau of Reclamation. The association has requested an opportunity to testify when the next appropriation bill is considered.

The Senate Appropriations Committee recommended that the Bureau disclose its engineers' estimates at the

time when bids are opened, as suggested by an A.G.C. representative.

Attempts may be made during the current session of Congress for the establishment of additional valley authorities patterned after the TVA. The association again will take appropriate action if necessary.

Contracts and Specifications. The work of two subcommittees and three task units of the A.G.C. Committee on Contract Forms and Specifications are of particular interest to the Heavy Construction and Railroad Contractors' Division.

These are the subcommittees on private engineering contract forms and standard government construction contract, and the task units on Corps of Engineers, Reclamation, and Bureau of Yards and Docks specifications. The work of this Committee has been reported in an earlier section.

The task unit on Bureau of Reclamation specifications has continued its work which already has resulted in revisions that make savings to the government.

The task unit with the Corps of Engineers met on June 28 to discuss A.G.C. recommendations for improvements in specifications. A number of points have been agreed upon, while others are still under study.

Joint Cooperative Committee. The Joint Cooperative Committee of the A.G.C. and the American Society of Civil Engineers is undertaking a study of the Standard Contract for Engineering Construction and the Standard Questionnaire and Financial Statement for Bidders for Engineering Construction.

RELATIONS WITH THE CONGRESS

The trend toward increasing federal government assistance to and regulation of more kinds of economic, agricultural and social activities has made the relations of industries with Congress more important each year.

The A.G.C. is the national organization which represents the general contracting industry before the national legislature.

Careful study has been given for many years by the officers, directors, members of the Legislative Committee, the staff and others to the character of the actions which the association takes in presenting essential information to committees and members of Congress for their guidance in enacting legislation which will affect the general contracting industry.

It has been the policy of the association consistently to present factual information to the Congress, to make only such recommendations as are in the public interest, and to conduct its relationships in such a way that they are open to the closest of scrutiny.

Informing Members on Legislation. One of the association's important activities has been to send information to member firms on legislation which is before the Congress.

There are many subjects before this session of Congress on which the association may present information. At the present time it is not possible to predict accurately what measures are likely to receive action before Congress adjourns for election campaigns. There are ob-

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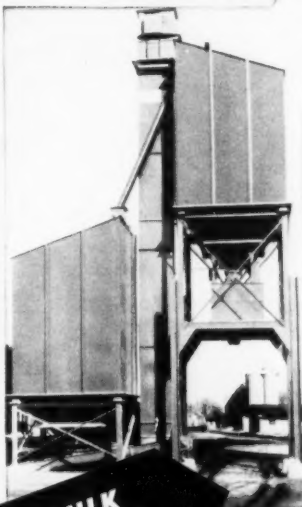


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servers who are predicting that little important legislation other than appropriations will be passed.

Congress might take action on a tax bill which would have the effect of encouraging or discouraging investment in business with a resulting effect on construction markets.

Basing Point. The bill to clarify the basing point question and to make it legal for sellers to absorb freight charges under proper circumstances was sent back to conference last month. The association presented testimony last year to recommend legislation that would permit sellers to sell at prices at which they could meet the competition in areas where they wished to do business. It is hoped that this legislation will be enacted during this session.

Federal-Aid Highway Authorization Bill. With the current law expiring June 30, it is essential that Congress enact a new federal-aid highway authorization bill. The A.G.C. has asked to testify when hearings are held by the committees handling the bill. By the time this report was written, no bill had been introduced.

The association has asked to testify again this year on the appropriation bill carrying funds for the Bureau of Reclamation, and recommend continuation of the restriction of the bureau's day labor operations. In recent years the association has made the recommendation which has been accepted by Congress.

Although final action is not expected at this session,

the association will again be prepared to testify on bills to establish other river valley authorities patterned after the TVA.

Overtime-on-overtime. Last year the association worked with the Department of Labor in drafting legislation which was subsequently enacted, amending the Fair Labor Standards Act to overcome the complexities brought about by the so-called overtime-on-overtime court decision.

Information was submitted in support of legislation which was enacted to authorize federal loans to states and local governments for the advance planning of their public works projects.

Although it is doubtful if amendments will be made to the Labor-Management Relations Act, the association will be prepared to present information on the complexities involved in applying the act to construction operations.

Over-all Appropriation Bill. Last year some construction projects were threatened with shutdowns because of delays in enacting appropriation bills. This year the Congress has adopted the plan for making all appropriations in one over-all bill. It is not known if this bill can be completed by the start of the new fiscal year on July 1.

The chapters perform a similar function of representing the industry before state legislatures and local units of government.

RELATIONS WITH GOVERNMENT

The policies and actions of scores of federal agencies have a direct effect on the daily operations of general contractors.

If the agencies are to administer equitably the laws enacted by Congress and to expend public funds so that maximum value is received, they need advice from the general contracting industry on how their policies and procedures will hamper or help the operations of contractors.

The A.G.C. is the national organization which represents the general contracting industry in its relations with the executive branch of the federal government.

Policy of Association. As with its relations with Congress, the policy of the association consistently has been to present factual information to governmental agencies, to make only such recommendations as are in the public interest, and to conduct its relationships in such a manner that they are open to the closest scrutiny.

An important part of its work is to send information

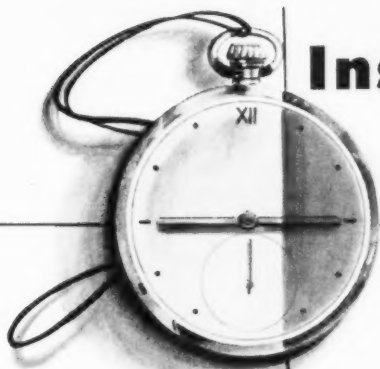
on policies, procedures, rules and regulations of federal agencies to its members.

The contacts made with scores of agencies during the year are far too numerous to give in detail here. A few of the more important will be mentioned briefly.

Much work to bring savings to the government on public works construction has been accomplished in the study of specifications with the Corps of Engineers, the Bureau of Yards and Docks, the Bureau of Reclamation, the Bureau of Public Roads, and others.

At the request of the United States Public Health Service, information has been supplied which has been helpful in establishing procedures for administering the federal-aid hospital construction program.

Through the Joint Cooperative Committee of the A.G.C. and the National Association of State Aviation Officials, information has been given which is of assistance in administering the federal aid airport construction program.



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Work of Chapters. The chapters have performed a great service to the Corps of Engineers in sponsoring, organizing and helping to train reserve construction units in the Army Affiliation Program, and to the Bureau of Yards and Docks in recruiting for the Seabees.

On planning for the national defense, the association has also been helpful to the National Security Resources Board and the Munitions Board.

Information has been presented to the National Labor Relations Board and the Chief Counsel's office on problems relating to administration of the Labor-Management Relations Act for construction. Contact is maintained with the Labor Department on its regulations relating to employment of labor in the industry, and to secure information to keep chapters advised of predetermination of wage rates for federal public works projects.

GOOD INDUSTRY RELATIONSHIPS CONTRIBUTE TO EFFICIENCY

Good relationships between the general contractor and all of those in the industry with whom he works in his daily operations can contribute directly to more efficient construction.

The A.G.C. is conducting a broad program of co-operation with the national organizations of the other groups within the industry for the purpose of correlating suggestions for practical ways of carrying out construction operations more efficiently.

Standard contract documents, specifications, design, and bidding and awarding procedures are being studied for possible improvements. Ideas are being sought for production of better machinery and better servicing of it. Means of improving relationships with workmen are being studied.

In this work, the policy which guides the association is that whatever recommendations are made to the respective associations shall be fair and equitable to everyone concerned, and shall be in the public interest.

Joint Cooperative Committees. The association now has established six joint cooperative committees with other national organizations in the construction industry. These associations are:

- American Institute of Architects
- American Society of Civil Engineers
- American Association of State Highway Officials
- Associated Equipment Distributors
- National Association of State Aviation Officials
- Construction Industry Manufacturers Association

Hoover Report. Extensive reorganization of the executive branch of the government was recommended last year by a special commission headed by former President Herbert Hoover. A Citizens Committee for the Hoover Report has been organized to press for legislation to bring about the reorganization plans. Part of the proposals would consolidate most federal construction functions in the Interior Department.

So far the only reorganization put into effect or recommended to Congress by the President directly affecting the construction industry has been transfer of the Bureau of Public Roads to the Department of Commerce. There has been no change in the Bureau's policies.

The chapters similarly represent the industry in its relations with state and local agencies.

Other Cooperation. Other national organizations with which the A.G.C. has cooperated include:

Eight national associations of specialty contractors and the Building and Construction Trades Department, A.F.L., in the establishment and operation of the National Joint Board for the Settlement of Jurisdictional Disputes.

National Safety Council, American Society of Testing Materials, American Standards Association, Construction and Civic Development Department Committee of the Chamber of Commerce of the United States, Concrete Reinforcing Steel Institute, Bureau of Contract Information, Surety Association of America, Highway Research Board of the National Research Council, Building Research Advisory Board of the National Research Council, American Trade Association Executives.

Through work with these organizations and others, recommendations are developed which lead to better relationships between the individual general contractor and the others in the industry with whom he works. Suggestions are developed which lead to more efficient construction.

Chapter Relationships. Many of the chapters have established similar cooperative relationships with other organizations in their communities to the benefit of general contractors, the construction industry and the public.

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GENERAL CONTRACTORS CONTRIBUTE TO NATIONAL DEFENSE

World War II demonstrated the vital necessity of close cooperation between the military and general contractors. Planning for present and future security of the nation indicates that even closer coordination may be required.

Members, chapters and branches, and the national association are making valuable contributions now to preparations for the national defense, and are thereby performing an important public service.

Army Affiliation Program. Chapters and branches have sponsored all but one of the association's quota of construction reserve units in the Army Affiliation Program. One aviation engineer battalion remains to be sponsored before the quota of 85 is fulfilled.

By the end of January, 82 of the units had been activated. At the latest report the strength of all the units was 1,037 officers and 562 enlisted men.

The Army is making a thorough review of its entire reserve unit program. Some adjustments may be made to reduce the number of units to bring the program within available appropriations. It is not expected that

much change will be made in the units which the A.G.C. has been sponsoring in cooperation with the Corps of Engineers.

Navy Seabee Program. Assistance has been continued in helping the Bureau of Yards and Docks in the Navy Seabee reserve recruiting program. Association representatives have addressed Bureau of Yards and Docks seminars for reserve officers.

Information has been presented to the Munitions Board and the National Security Resources Board for their use in defense planning.

Association representatives were invited by the Secretary of Defense to participate in the Second Civilian Orientation Course last year. Others were guests of the Navy in final phases of Operation Camid IV, during which the services joined in beach assault operations.

Members of the staff are being certified so that they may learn of confidential information while assisting war-time disaster relief planning under the civil defense program.

GOOD RELATIONS WITH THE PUBLIC ESSENTIAL TO SUCCESS

The long range success of an industry depends ultimately on the support that it receives from the public.

The industry must sell a good product to the public at the right price. As the nation has grown so that industry is no longer a purely local operation in small communities where all men know each other personally, it has become necessary for industries to undertake planned programs to explain why they merit public confidence.

The A.G.C. is the organization which serves as a spokesman for the general contracting industry on a national scale, and the chapters and branches serve in a similar capacity on a state or local scale.

Association activities described as public relations supplement the work of individual general contracting firms in explaining the particular company to those with whom it comes in contact.

The A.G.C. public relations program grows from the bylaws which state that one of the special purposes of the association is "to maintain the standards of the contracting business at the level necessitated by its quasi-professional character, and to establish members of the association in the public mind as contractors who fulfill their obligations in good faith."

All actions of the entire association are directed

toward accomplishing work which is of benefit to its members, the construction industry and the public.

Public Relations Activities. The public relations activities are designed to bring to public attention the activities of members and the association, and to demonstrate that A.G.C. contractors merit public confidence. This work is not separate from other association activities; rather it is an integral part of all association activities which helps to make them more effective.

The first segment of the public for the national association is composed of its members and chapters. Two principal public relations actions were taken during the past year for members of the association.

National News Letter. Last June publication was started of the *National News Letter* which is sent at least once a month to all members and chapters. The purpose of the letter is to present as tersely as possible information useful in the conduct of a contracting business, information on association actions, and notice to members of what additional information is available from chapters.

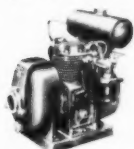
Publication was started after thorough study by the Executive and Public Relations Committees and the



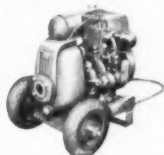
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IT'S THE BARNES "33,000 for 1"

THINK of pumping not 1,000 gallons — not 10,000 gallons — but 33,000 gallons of water with only 1 gallon of gas! This is amazing economy! This is economy unmatched! And this is assurance that Barnes Automatic Centrifugals actually deliver more water for your pumping dollar. Ask your dealer for a free demonstration of these Barnes "33,000 for 1" Pumps. You'll find Barnes Pumps today's best buy — and you want to buy the best today.

BARNES MANUFACTURING CO.

MANSFIELD, OHIO

*Manufacturers of Precision Water Control
Products for Over 50 Years*

staff. Indications are that the letter is fulfilling its purpose.

The Constructor. The second action taken was a complete reorganization of *The Constructor* last June to permit the magazine to specialize more exactly on the executive problems of the general contractor, and present the information in the clearest, most logical and easily read manner possible.

Post card replies indicated that it is read by substantially all of the principal members of contracting firms.

The magazine fulfills an important public relations function for the industry, as well as bringing useful information to A.G.C. members. Many of the chapters have purchased subscriptions for architects, engineers, public officials, materials and equipment manufacturers and dealers, bankers, purchasers of construction and others.

The national association is increasing the numbers of copies which are sent to policy making executives of federal agencies, other national organizations in the construction industry, national financial institutions, engineering schools and others who find the information carried of value.

The magazine brings to these other groups information useful in their operations, and news of A.G.C. accomplishments which are of general benefit.

New Members. Another segment of the public for the national association is composed of new and potential members. A proposed A.G.C. Member's Kit is being presented to appropriate committee meetings at this convention for study. Purpose of the kit is to provide a new member with all essential information about the association. A number of potential members have received various publications which are samples of A.G.C. work.

An increasing number of chapters have been expanding or developing public relations programs for their communities. Study will be given to how the national association can be of further assistance to chapters in their local programs.

Publication of Documents. Another part of the association's public relations program is the publication and distribution of documents developed through association work. The aim in publishing the documents has been to design them so that by their appearance they

reflect credit upon the association and the members it represents.

Among the documents published during the past year have been:

- Third revised edition of the *Manual of Accident Prevention in Construction*.
- Two printings of the *Contractors' Equipment Ownership Expense* manual.
- A second printing of the booklet, *The Contract Method of Construction Safeguards Public Funds*.
- A third printing of *The Banker and the Contractor*, the address by Guy C. Kiddoo, of the First National Bank in Chicago to the 30th Anniversary Convention.
- Another printing of the *A.G.C. Code of Ethical Conduct*.
- Revisions to the booklet, *A Suggested Guide to Bidding Procedure*.
- The *Insurance Check List*, which is a guide to the kinds of insurance available for construction operations and which can be used to keep a record of all policies on a project.

Publicity. Through press releases news of association actions is reported to the public. These are sent to trade publications, press associations, newspapers, radio networks and other media which are interested in receiving the material.

All information is prepared carefully for accuracy and usefulness to the news medium. The procedures for reporting board meetings and conventions have been highly developed.

Advertising. In order to carry messages from the association to groups influential in the award of construction contracts the association has conducted a small program of national advertising. This is the most economical method of carrying a brief message to large numbers of people.

Two advertisements were published last year. One featured the A.G.C. emblem, which for more than 30 years has identified general contractors of skill, integrity and responsibility. The other featured the headline, "The Contract Method of Construction Safeguards Public Funds."

The policy followed in the advertising is that the advertisements feature important parts of the A.G.C. program which are carried out for the benefit of the membership, the industry and the public.



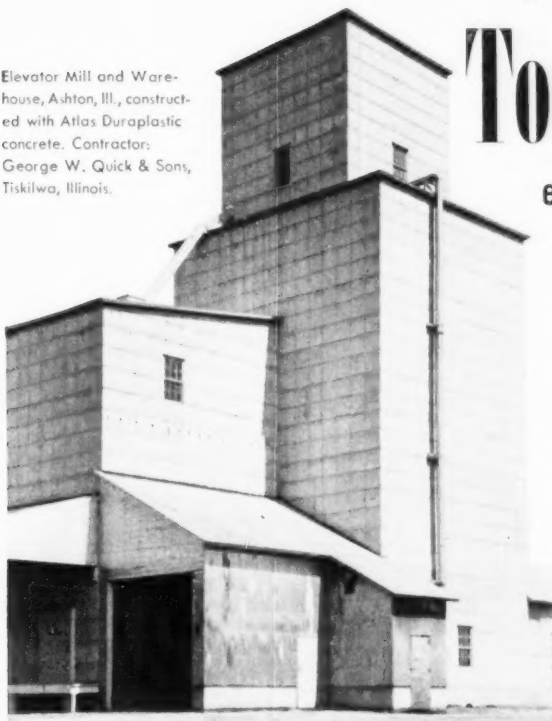
Ten Years Ago...

in August, 1939, this concrete test paving was laid in Second Avenue North, Minneapolis. The badly scaled section of roadway in the background was made with regular portland cement. The foreground section, laid at the same time, was made with Atlas Duraplastic—the first commercial use of the air-entraining portland cement originated and developed by Universal Atlas.

Both sections, subjected to the severity of ten Minneapolis winters and to heavy applications of de-icing salts, are shown just as they appeared in July, 1949—convincing proof of the characteristic durability of Duraplastic concrete, of its high resistance to freezing thawing weather and the scaling action of de-icing salts. Longitudinal structural crack shows some ravelling. Note perfect transverse joint.



Elevator Mill and Warehouse, Ashton, Ill., constructed with Atlas Duraplastic concrete. Contractor: George W. Quick & Sons, Tiskilwa, Illinois.



Today . . . more plastic easy-to-place structural concrete with **DURAPLASTIC***

During the past decade, the advantages of Atlas Duraplastic air-entraining cement for paving concrete have been increasingly applied to structural and mass concrete—for foundations, walls, columns and floors; for slip-form work, gunite, stucco and other uses.

Particularly, has the increased plasticity of Duraplastic concrete been of benefit in structural work. For example, on this elevator mill and warehouse, the contractor reported, "Use of Duraplastic saved about 12 man-hours of labor per day while running concrete walls. First job on which we have used Duraplastic, and were more than satisfied with the results. Will use it in the future."

As it does for paving concrete, Duraplastic for structural and mass concrete permits the use of less mixing water for a given slump. The resulting mix is more plastic, more workable, more uniform and more cohesive. It's easy to place and finish. Water-gain and segregation are reduced. Surface appearance is improved and exhibits higher resistance to the effects of weather exposure.

Duraplastic provides the precise amount of air-entraining agent interground with the cement for satisfactory field performance. It complies with ASTM and Federal specifications, sells at the same price as regular cement and calls for no unusual changes in procedure.

OFFICES: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

Send for new free booklet, "A Decade of Duraplastic Air-Entraining Cement." Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 17, N. Y.

*"Duraplastic" is the registered trade mark of the air-entraining portland cement material produced by Universal Atlas Cement Company.

ATLAS DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

MAKES BETTER CONCRETE AT NO EXTRA COST



"THE THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—NBC Network

3 Joint Cooperative Groups Meet; Equipment Discussed

- C.I.M.A., A.E.D., A.S.C.E. Units in Parleys
- Contract Method of Construction Supported

» A FURTHER exchange of ideas between general contractors and the manufacturers of construction equipment as to what is needed in the way of new equipment marked a meeting of the Joint Cooperative Committee, Construction Industry Manufacturers Association-Associated General Contractors of America, in Chicago this winter.

The meeting was one of three of such committees held at about the same time. The Joint Cooperative Committee, Associated Equipment Dealers-Associated General Contractors, also met in Chicago, and the Joint Cooperative Committee, American Society of Civil Engineers-Associated General Contractors, met in New York City.

The purpose of all of the joint committees which the A.G.C. has helped to form is to increase the efficiency of the construction industry for the benefit of the public and the industry.

Interchange of Ideas

Continuing a discussion started last September of what new types of construction equipment were needed, the C.I.M.A.-A.G.C. group felt that much could be accomplished in this direction by cooperation of the two organizations.

Leet M. Denton, an A.G.C. member of the committee, suggested that one type of equipment which might be developed was a light-weight concrete finishing machine for city street paving jobs which also could be used on short jobs such as turn-offs, etc., in highway work. It was also suggested that there was a need for a small concrete mixer for bridge jobs.

This meeting also was marked by a discussion over certain tendencies in the industry which violated the principles of private enterprise, threatening the welfare of the industry and the best interests of the public. The com-

mittee adopted a resolution expressing its endorsement of the principle of private competitive enterprise as applied to the construction of highways and other public works and urging full support of this principle by the members of both associations.

Booklets Discussed

The A.E.D.-A.G.C. group covered a wide variety of subjects concerned with distributor-contractor relationships and the industry at large. Much of the discussion centered around the repair part order form "check list" and the pamphlet, "Recommendations for Standardization and Improvement of Repair Parts Books."

It was noted that the A.E.D. roster would be sent to all A.G.C. chapter offices within the next few weeks and that the roster would be made available to A.G.C. members at cost.

This group also went on record as backing the contract method of construction.

The Joint Cooperative Committee, A.S.C.E.-A.G.C., discussed how the work of both organizations aimed at assisting engineers and construction workers to obtain employment could be made more effective. It also decided that a special committee would make a study of the Hoover Commission's recommendation for the establishment of a federal Department of Transportation.



Chase

The construction industry is represented in Washington, when the Trade Association Committee of the Chamber of Commerce of the United States meets, by H. E. Foreman, third from left, seated, managing director of The Associated General Contractors of America, Inc. Those in the picture are, seated left to right, Milton A. Smith of the chamber, Joseph M. Creed of the American Bankers Association, Mr. Foreman, Robert C. Hibben of the Association of Ice Cream Manufacturers, T. E. Velpert of the Copper and Brass Research Association, L. E. Parmenter of the National School Service Institute, Benjamin F. Castle of the Milk Industry Foundation, John H. Reinecke of the Wood Office Furniture Institute, Henry Bahr of the National Lumber Manufacturers Association; standing, left to right, Paul Good of the chamber, Henry Fowler of the chamber, William A. Penrose of the Paper Mill Wire Cloth Manufacturers Association, and Charles E. Boyd of Detroit's Retail Merchants Association.

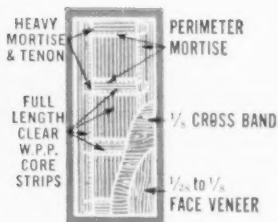
Embody the BEAUTY OF WOOD

without the **HAZARD!**

**FIREPROOFED
with PROTEXOL**



Unmatched as an architectural medium for beauty — wood offers even greater advantages when impregnated by the approved *Protexol process. The natural charm and greater attractiveness of wood . . . combined with the safety and strength added by the Protexol treatment creates an entirely new concept of wood as a construction material.



Sectional view of the Protexol-impregnated Fox-Made Wood Fire Door, approved for 60 and 90-minute fire exposures by the New York Board of Standards and Appeals, and Factory Mutual Laboratories.

*Accepted by national fire authorities.

- **FIREPROOFED** . . . Wood can't burn when Protexol-impregnated . . . eliminating fire hazards . . . assuring safer, better construction.
- **ROTPROOFED** . . . Protexol-impregnated wood is protected against decay, mold, mildew and stain.
- **VERMINPROOFED** . . . Prevention of termites, powder post beetles, wood borers and other vermin helps wood retain structural strength and beauty.
- **DIMENSION-CONTROLLED** . . . Protexol-impregnation reduces shrinkage and warping to a minimum, stops grain raising and checking.

Write for colorful brochure A.I.A. No. 19
19 A 33 Covers Fox Made Wood Fire Door
test and approval.



FOX BROS. MFG. CO. *☆ 75 Years Experience*

MANUFACTURERS OF ARCHITECTURAL WOODWORK

Custom-built Millwork

2768 VICTOR STREET

ST. LOUIS 4, MISSOURI

More A.G.C. Chapters, Branches Hold Elections and Installations

• Local Organizations Report Annual Meetings

» THE MONTH of February saw another large group of chapters and branches of The Associated General Contractors of America electing and installing their officers for the year ahead. This group included:

Chattanooga Chapter

John Martin Sr., Chattanooga (Tennessee) general contractor, will serve as president of the Chattanooga Chapter, A.G.C., in 1950 after his election at the recent annual meeting. He succeeds Mark K. Wilson, Jr., who becomes a member of the chapter's board of directors.

Others elected were Homer Parks, vice president, and H. M. Collins, secretary-treasurer, along with four directors. The directors were Mr. Wilson, Lee Warlick, O. B. Davis and George Verhey.

Following up on an action which had been indicated earlier by Mr. Wilson, the chapter voted to invite the Governing and Advisory Boards of The Associated General Contractors of America to hold its mid-year meeting in Chattanooga in September.

Kansas Contractors Association

With representatives of 100 firms

present, The Kansas Contractors Association, A.G.C., recently held an annual meeting which was marked by simultaneous gatherings of the Joint Cooperative Committee, Associated General Contractors-American Association of State Highway Officials, and of municipal officials and contractors working on municipal projects.

M. Clare Miller of the San Ore Construction Co., McPherson, was re-elected president. C. E. Maxwell of Columbus is vice president; C. L. Bart of Hutchinson, treasurer. J. W. Ballard of Topeka is engineer-manager.

The directors include Frank H. Fretto of Pittsburg, J. W. Frisbie of Kansas City, Missouri, C. Russell Ralph of Topeka, Edgar C. Stewart of Wichita, and M. W. Watson of Topeka.

Louisiana Highway & Heavy Construction Branch

A. N. Goldberg of New Orleans was re-elected president of the Louisiana Highway & Heavy Construction Branch, A.G.C., at its recent annual meeting in the Hotel Roosevelt in New Orleans. Glenway W. Maxon, vice president-elect of The Associated General Contractors of America, was a speaker at the meeting.

Officers re-elected with Mr. Goldberg were Arthur Watson vice president and Roy M. Lilly secretary-treasurer. Renamed to the board of directors were W. R. Aldrich, A. C. Campbell, G. W. James and Frank Miller. Robert N. Kinnaird is manager.

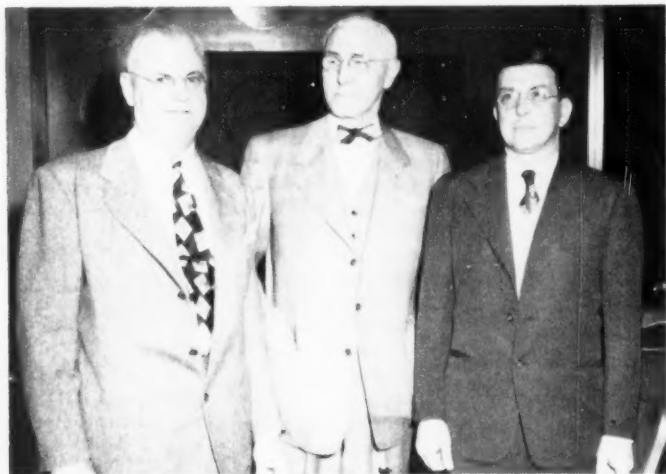
Besides Mr. Maxon, speakers included Dean Leo J. Lassalle of the School of Engineering at the Louisiana State University and Sidney Roebuck, chairman of the Mississippi Highway Commission. Dean Lassalle, who recently had visited the British Isles, expressed the belief that the people there might turn away from their present, Socialist form of government.

Louisville Chapter

The Louisville (Kentucky) Chapter, A.G.C., has elected John F. Nicoulin of Hays & Nicoulin, Louisville, its president for 1950.

Guy O. Hawks and William M. Irion, both of Louisville, are first and second vice presidents respectively. Henry A. Steilberg of Shively, Kentucky, is treasurer. D. R. Lyman is chapter manager. Directors are K. A. Barker, Jr., Ale Bornstein, George C.

(Continued on page 74)



Construction Digest Photo

1950 Officers of A.G.C. of Missouri

Governor Forrest Smith of Missouri was on hand to congratulate L. J. Kissick, Sr., of Hickman Mills, when Mr. Kissick took over last month as president of The Associated General Contractors of Missouri. Other officers are R. R. Gast of Louisiana, Missouri, vice president; J. M. Joyce of Keokuk, Iowa, treasurer, and E. C. L. Wagner of Jefferson City, Missouri, secretary and manager.

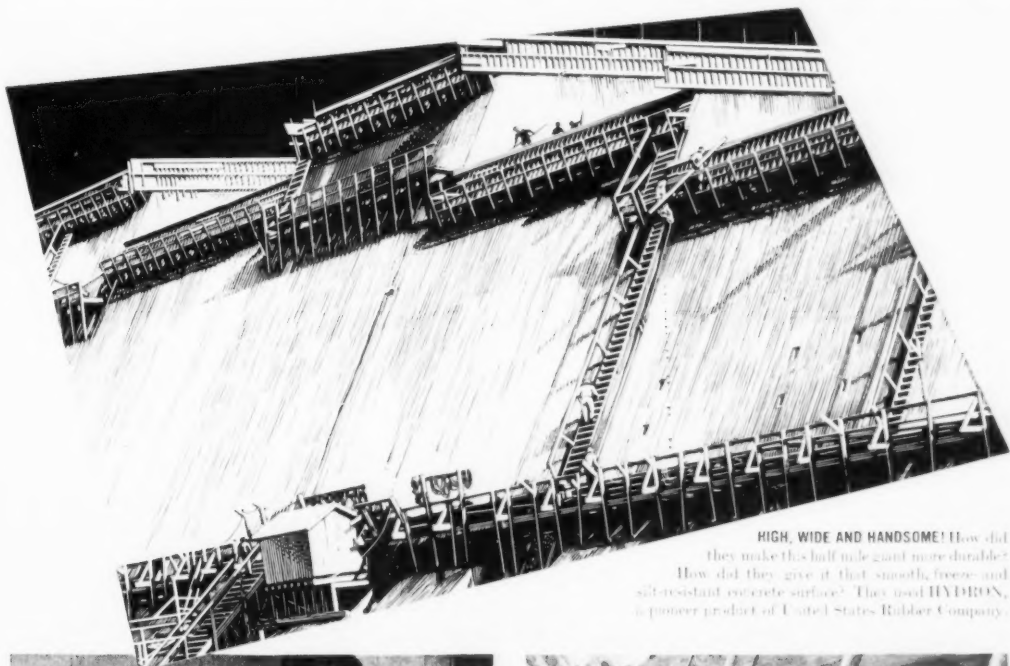
In the picture above, Mr. Kissick is at the left; Mr. Wagner, in the center; Mr. Gast, on the right. Mr. Joyce

was absent when picture was taken.

Directors of The Associated General Contractors of Missouri for the coming year are: Bituminous Division: F. E. Dawkins, H. W. Masters, George S. Fowler; Bridge Division: J. R. Bushman, Dale Maxwell, E. L. Harlin; Grading Division: R. R. Riney, E. W. Menefee, Morris De Witt; Heavy Construction Division: Alexander Matland, H. J. Massman, Jr., William M. Cowgill; Paving Division: M. N. Windle, J. M. Joyce, F. E. Rolfe.

SECRET OF A GIANT'S STRENGTH

Giant Norfolk Dam built with Hydron Form Linings for stronger, pit-free concrete surfaces



HIGH, WIDE AND HANDSOME! How did they make this half-mile giant more durable? How did they give it that smooth, freeze- and salt-resistant concrete surface? They used HYDRON, a pioneer product of United States Rubber Company.



LEARN THE SECRET of Hydron! It's a flexible absorptive form lining only 0.08 of an inch thick. It absorbs excess water and eliminates trapped air. Concrete laid against Hydron is smoother—lasts longer.



HOW IT'S DONE! Hydron is mounted to wooden forms by rapid fire staple guns, to metal frames, with special adhesive. Comes in a flat box, 4x6 ft. Easy to handle, easy to cut or trim for any giant job!

Engineers and contractors who have used Hydron Form Linings report that Hydron adds *years* to the serviceable life of concrete. Yet, the *total* cost, including a satisfactory profit, is only 12¢ to 16¢ per square foot. For more information write Mechanical Goods Division.

A DEVELOPMENT OF

U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY

ROCKEFELLER CENTER, NEW YORK 20, N. Y.

(Continued from page 72)

Eady, John L. Rommel, Jr., and Ed T. Sullivan.

Montana Building Chapter

The Montana Building Chapter, A.G.C., which has its headquarters in Helena, has elected William R. Lowe of the Riedesel Construction Co., Billings, president for 1950.

Vice president is E. J. Decker of Helena; treasurer, Frank Messmer of Bozeman. The directors include Charles Pew of Missoula, the retiring president; L. C. Hardy of Billings, and P. B. Anderson of Shelby.

The chapter's secretary manager is J. Edward Hergert of Helena.

Montana Contractors Association

George Nilson of the Nilson-Smith Construction Co., Great Falls, has been elected president of the Montana Contractors Association, A.G.C., which also has its headquarters in Helena.

Edward O'Neil of Havre is vice president; Bert Lalonde, Sidney, treasurer. The directors include Dan J. Mooney of Butte, last year's president; L. M. Sheridan, also of Butte; E. W. McLaughlin of Livingston; A. W. McIntyre of Great Falls; and Marty Levine of Rapid City, South Dakota.

J. Edward Hergert of Helena is also secretary manager of this chapter.

Mountain Pacific Chapter

The Mountain Pacific Chapter, A.G.C., located in Seattle, has elected C. V. Wilder, Bellingham (Washington) general contractor, as its president for 1950. Tom Youell is vice president and Don Conney is treasurer. Both are from Seattle.

The trustees are George Gaunt, left of Aberdeen, A. W. Stevens of Burlington, Paul Ellis of Kennewick, Kenneth Riggle of Yakima, Phil Butler, Joe Fiorito, Al Colin, Roy Snow, Alex McEachern, Henry Nollan, Hugh Anderson, Elmer White and C. R. Wilcox, the last nine all of Seattle. Associate trustee is Jack Beeson.

Paul Fredrickson, chapter manager, described the meeting as one of the best attended and most interesting in the chapter's history.

Associated Contractors of New Mexico

M. J. Wylie, Albuquerque (New Mexico) general contractor, is president.

(Continued on page 76)

Western Pennsylvania Contractors Meet

• Dinner Climaxes Record-Breaking Year for Group

Approximately 1,000 general contractors and their representatives attended the 16th annual dinner of The Constructors Association of Western Pennsylvania, A.G.C., last month in the William Penn Hotel, Pittsburgh, honoring Retiring President W. E. Crawford of George Vang, Inc. The dinner was a climax to a record-breaking year for the heavy and highway construction industry in the area, with \$70,000,000 of work under way.

Elected to the board of governors were: Heavy Division: Mr. Crawford, D. Dinardo, Samuel L. Fuller, Carl J. Jacobsen, Carl B. Jansen, J. E. O'Leary, N. T. Wellings; Highway Division: O. H. Benintend, Max C. Harrison, William F. McCrady, William R. McQuade, James Nardulli, Roy F. O'Mara, Frank O. Patterson, Russell C. Swank. The newly elected board was scheduled to pick officers of the chapter for 1950. Thurman C. Tejan is executive secretary.

Carl J. Jacobsen, chairman of the Accident Prevention Committee, presented awards to companies and superintendents having the best safety records for 1949.

A bronze plaque was awarded to the Allegheny Asphalt & Paving Co., Inc., of Pittsburgh for the best record among the larger companies, with a similar plaque going to the M. O'Herron Co. of Pittsburgh, for the second row in a year, for the best record among smaller companies.

Traveling bags were given as prizes to B. N. Parker of the Dravo Corp., John Scott of the Booth & Flinn Co., and R. A. Thompson of Dravo for excellent records in large company competition and to Pat Donohue of the James H. McQuade & Sons Co. in the smaller company division.

Rear Admiral Ellis M. Zacharias, United States Navy retired, the principal speaker, discussed developments in the Far East.



Oklahoma Contractors, Architects Form Joint Committee

A joint cooperative committee of the Oklahoma Builders Chapter, A.G.C., and the Oklahoma Chapter, American Institute of Architects, was approved recently at the sixth annual joint meeting of the two state groups in Oklahoma City.

In the picture above, Mrs. Ruth

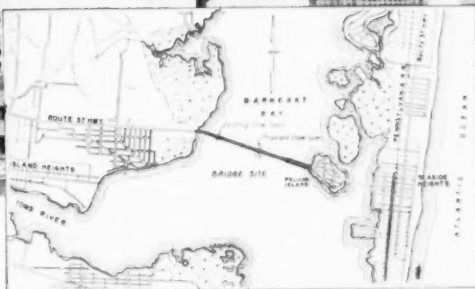
Ann Leslie, executive secretary of the A.G.C. unit, is shown talking with, from left to right, President Albert Ross of the Oklahoma Chapter, A.I.A.; Walter Kraft, director of physical plant at the University of Oklahoma, and D. A. Harmon, president of the A.G.C. chapter.

BARNEGAT BAY BRIDGE

—A **LINK-BELT SPEEDER** JOB!

6

USED BY
OLE HANSEN & SONS
ON MILE-LONG SPAN



Above: A K-370 and a K-25 operating on barge erecting steel on approach to bascule span.

Location of new bridge across Barnegat Bay, Ocean County, New Jersey.



Hansen's fleet of Link-Belt Speeders includes HC-90 truck-mounted Shovel-Cranes, as shown here, loading 20 ton plate girder 89 ft. long, on trailer for transporting to bridge site.

Crawler or wheel-mounted, the versatile Link-Belt Speeder is a machine of many uses, giving many opportunities for turning a good profit.

Outstanding suitability of Link-Belt Speeder Shovel-Cranes on large construction projects is well illustrated in the performance of 6 machines, on the Barnegat Bay Bridge. Ole Hansen & Sons, general contractors, have used only Link-Belt Speeders for the past 16 years, and now own ten.

Building 68 piers, including coffer dams, placing 19,000 yards of concrete, setting 10 million pounds of steel, and driving 104,000 lineal feet of timber pilings, were all done with Link-Belt Speeder cranes.

Power, speed, easy control, low operating costs, all show Link-Belt Speeders to be money-makers on every type of construction.

31,763

LINK-BELT SPEEDER



LINK-BELT SPEEDER CORPORATION,
CEDAR RAPIDS, IOWA

Builders of the Most Complete Line of
SHOVELS-CRANES-DRAWLINES

(Continued from page 14)

dent of The Associated Contractors of New Mexico, A.G.C., for 1950, succeeding W. T. Bookout of Las Vegas.

The vice president is A. J. Haney; secretary-treasurer, P. D. Miller. Directors are T. R. Brown, Mr. Haney, Mr. Miller, Mr. Wylie and N. J. Skousen. All are from Albuquerque.

Manager of this A.G.C. unit is L. W. Candelou of Santa Fe.

Northern California Chapter

The newly elected directors of the Northern California Chapter, A.G.C. (Page 62, February CONSTRUCTOR), have chosen George C. Looz of Stolte, Inc., Oakland, as president, Harold O. Parish of Benicia is vice president and Gordon H. Ball of Berkeley is treasurer. Mr. Ball was president last year. Winfield H. Arata is secretary-manager.

Oklahoma Builders Chapter

With representatives of other groups in the industry as its guests and with B. L. Knowles, engineer-adviser of The Associated General Contractors of America, as a speaker, the Oklahoma Builders Chapter, A.G.C., recently held its annual meeting. Mr. Knowles emphasized the importance of working for construction by contract and discussed the legislative problems on excise taxes and public housing.

E. B. Bass of D. C. Bass & Sons, Enid, was elected president. Vice presidents are J. J. Bollinger of Oklahoma City and L. F. Rooney of Muskogee. The secretary-treasurer is H. R. Jensen of Oklahoma City and the directors are Ted DeWitt and J. E. Waller of Tulsa, and E. H. Walpole and D. A. Harmon of Oklahoma City.

Mrs. Ruth Ann Leslie of Oklahoma City is executive secretary of this chapter.

Association of Oklahoma General Contractors

The Association of Oklahoma General Contractors, Inc., Highway and Heavy Division, A.G.C., has re-elected R. R. Ryan of the Ryan Richards Co., Oklahoma City, as its president.

Re-elected with him were Vice President A. H. Layman of Tulsa and Secretary-Treasurer John C. McConnell of Muskogee. Glenn M. McDonald is manager of this branch.

The board of governors includes Mr. Ryan, Mr. Layman and J. A. Raines, J. O. Pharaoh, Harry Poston, Jack Briscoe, Ray Mullinix, John McConnell, and E. E. Park.

Portland Chapter

Karl F. Jacobson of Jacobson & Brittan, Inc., is the new president of the Portland Chapter, A.G.C., succeeding Ray Northcutt.

Elected to serve with Mr. Jacobson were Henry A. Kuckenberg, first vice president; Herb G. Palmberg, second vice president; Frank Lyons, secretary-treasurer. Mr. Lyons was re-elected to his post. The chapter manager is A. H. (Bill) Harding. New directors chosen at the annual meeting are Lloyd Babler and Edward Bjorklund.

Mr. Northcutt reported that 1949 had been a good year for the chapter and the industry. The chapter membership, he pointed out, had risen to 106 contractors and 149 associates as of January 1, compared with 91 contractors and 145 associates as of January 1, 1949.

A.B.C. of Rockford

Merrill F. Butler of the Frank S. Pearce Co., Rockford, Illinois, was elected president of The Associated Building Contractors of Rockford at the recent annual meeting of the chapter's board of directors.

Officers who will serve with Mr. Butler are vice president Charles Scandrol and secretary-treasurer Clara M. Miller. Both are residents of Rockford. Harry Green is manager of this chapter. The board of directors includes Harry Grip, Bengt Sjostrom, Merrill F. Glass, Ture Bloom and Mr. Scandrol.

President Butler is expected to announce his committee appointments shortly.

Southern Nevada Builders Chapter

The Southern Nevada Builders Chapter, A.G.C., has elected Richard Chase of the Lemcke Construction Co., Las Vegas, as its president for 1950.

Serving with Mr. Chase are Ben O. Davey vice president, Stanley E. Walker secretary, and J. A. Tiberti treasurer, all of Las Vegas.

Waco Chapter

D. R. Hendrick of Hendrick & Adams, Waco, Texas, has been elected president of Waco Chapter, A.G.C., for 1950.

The chapter's vice president is William H. Smith; its secretary-treasurer, J. T. Hooker. Brooks W. Pearson is the chapter manager. All are residents of Waco.

Central California Chapter

A forum, dealing particularly with public works, in which the topics included segregated bids, bid listing requirements, bid depositories, plans and specifications, and subcontractor relations, was a feature of the recent annual meeting of the Central California Chapter, A.G.C.

The meeting unanimously elected the following directors for the year: Art B. Smith, Harold O. Sjoberg, Bert O. Summers, Robert McCarthy, William A. Campbell, Frank E. Burrows, James E. Roberts, Melvin Gautier and Bert C. Henry. Frank G. Coker is secretary-manager of the chapter.

In his annual report to the members, President Smith said that the construction industry in California had enjoyed another prosperous year in 1949, with the membership of the chapter alone accounting for more than \$103,000,000 in volume. He was optimistic about 1950 and cited as factors in his optimism the continually increasing population in California and the subsequently increased needs in commercial facilities, schools, hospitals and other public buildings. Vice president Sjoberg reported the chapter had a net gain of 33 members in the year for a total of 133 as of December 1949.

Priester Marks 30 Years

"Thirty Years of Achievement—1919-1949" is the title of a handsomely illustrated brochure published in December by the Priester Construction Co., A.G.C., of Davenport, Iowa. Officers of this building contracting organization are Walter A. Priester, president and treasurer; Oscar F. Priester, vice president; and Henry C. Priester, secretary.

"Thirty Years of Achievement" is divided into three main sections under a general heading of "Construction—a Record of the Nation's Growth: 1919-1949." First of these deals with work in 1919-1940, during the "recess from war." Second deals with the company's work during World War II. The third, "Engineering and Construction," tells of the company's work for its clients since the end of World War II.

STANDARD FORMS

COVERING IMPORTANT CONTRACTING PROCEDURE



Prepared by The Associated General Contractors of America and Cooperating Bodies

Order No.	MANUALS	Per Copy	Per Dozen	Per 100
1.	A.G.C. Manual (Contains documents listed below: Nos. 3-30, inclusive, and Nos. 34, 35, 36, 36A, 37, 38)	\$5.00	\$50.00	
2.	Accident Prevention Manual (Revised and enlarged 1949)	3.00	30.00	\$210.00
2b.	Good Public Relations for the General Contractor	.50		45.00

CONTRACTS

3.	Standard Contract for Engineering Construction issued by the Joint Conference on Standard Construction Contracts	25	2.75	20.00
4.	Standard Building Contract of the American Institute of Architects—Revised 5th Edition	.50		47.50
5.	Subcontract form—American Institute of Architects—Revised 5th Edition	.10		9.50
7.	Standard Government Contract and Instructions to Bidders	.10	.50	4.00
8.	A.G.C. Cost Plus a Fee Contract	.10	.50	2.50
9.	A.I.A. Cost Plus a Fee Agreement between Contractor and Owner	.10		
11.	Equipment Rental Agreement	.10	.50	3.00
12.	A.G.C. Proposal Form	.10	.50	3.00

ESTIMATING AND ACCOUNTING

16.	Building Estimate Summary	.10	.50	3.00
17.	Job Overhead Summary	.10	.50	3.00
20.	Contractors' Equipment Ownership Expense (Itemized tables of ownership expense elements with instructions for application—Revised 1949)	1.00	10.00	65.00
21.	Equipment Record—Bond paper	.10	.50	3.00
22.	Equipment Record—Cardboard	.10	.50	3.50

INVESTIGATION OF BIDDERS

24.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover Engineering Construction (For Qualifying Before Bidding)	.20	1.80	12.00
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Order No.	INVESTIGATION OF BIDDERS (Continued)	Per Copy	Per Dozen	Per 100
25.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover Building Construction (For Qualifying Before Bidding)	.20	\$1.80	\$12.00
26.	Standard Questionnaires and Financial Statement for Bidders—Complete in Cover Engineering Construction (For Qualifying After Bidding)	.20	1.80	12.00
27.	Standard Questionnaires and Financial Statement for Bidders—Complete in Cover Building Construction (For Qualifying After Bidding)	.20	1.80	12.00
28.	Financial Statement and Questionnaire for Credit Transactions	.20	1.80	12.00

MISCELLANEOUS

29.	Insurance Check List	.10	1.00	5.00
30.	The Functions of a General Contractor	.10	.75	6.00
34.	A.G.C. Governing Provisions	.10	.50	3.00
35.	A.G.C. Code of Ethical Conduct	.10	.50	3.00
36.	Concrete Mixer Standards	Single copies—no charge; quantity prices on application.		
36a.	Contractors' Pump Standards			
37.	A.I.A. Standard Form of Arbitration Procedure			
38.	Suggested Guide to Bidding Procedure			



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List of Styles and Prices on request.

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41.	A.G.C. Decalcomania Seal (red and black)	
a.	10" dia.	20
b.	5" dia.	10

Metal Seals and Decals: 20% discount for orders of more than 50; 40% discount for orders of 200 or more.

43. A.G.C. SOCIAL SECURITY FORMS

Form SS1: Application for Employment;
Form SS2: Employees' History Record;
Form SS3: Employees' Employment and Earnings; Form SS4: Payroll. List of prices and styles will be furnished to A.G.C. members on request.

USE THE CONVENIENT COUPON TO PLACE YOUR ORDER

Order No.	Amount	Cost	9	26	38
			11	27	40
1			12	28	41a
2			16	29	41b
2b			17	30	43. Price List and Samples <input type="checkbox"/>
3			20	34	Price List and Styles of Emblem <input type="checkbox"/>
4			21	35	
5			22	36	
7			24	36a	
8			25	37	TOTAL COST

Make Checks payable to CONSTRUCTION FOUNDATION, A.G.C., Munsey Building, Washington 4, D. C.

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CHAPTERS • BRANCHES

New Orleans Cites State A.G.C. Growth

- Henry Boh Elected President; Volume Cited

The growth of The Associated General Contractors of America in Louisiana and the high volume of business in New Orleans done by members of the A.G.C.'s New Orleans Chapter were stressed at the chapter's recent annual meeting.

Henry Boh, managing partner of the Boh Brothers Construction Company, New Orleans, was elected president of the chapter to succeed Gaston C. Gardebled, who had held the post for two years. Other officers are George S. Farnsworth, vice president; J. A. Haase, Jr., treasurer; John C. Bartley, secretary. Sidney H. Walker is the managing director of the chapter.

The board of directors, in addition to Mr. Boh, Mr. Gardebled, Mr. Farnsworth, Mr. Haase and Mr. Bartley, includes Lionel F. Favret, Gervais F. Favrot, J. Gordon Lee, William F. Oakes, Claiborne Perrilliat, John Riess, George J. Glover and A. N. Goldberg.

In his concluding report, Mr. Gardebled pointed out that in approximately a year the addition of

the Louisiana Highway and Heavy Construction Branch at Baton Rouge and the Central Louisiana Building Chapter at Alexandria had just about completely covered the state for A.G.C. The other Louisiana chapters are those at New Orleans, Shreveport, Lake Charles and Baton Rouge.

He also asserted that the 31 contracting organizations holding active memberships in the New Orleans Chapter performed approximately 80 per cent of the construction work in the New Orleans area.

The firm which Mr. Boh heads was a charter member of the General Contractors Association of New Orleans, which became the New Orleans Chapter in 1926. It has specialized in heavy construction in the past, but has recently entered the field of commercial and industrial building. Mr. Boh is a director of the Construction Industry Association of New Orleans and chairman of the association's labor committee. He is also a director of the New Orleans Chamber of Commerce and vice president of the Boy Scouts Council there.

West Virginia A.G.C. Hears Work Ahead

- Ray E. Ritchie New Head of State Association

A state highway construction program of approximately \$25,000,000 this year and a building program of approximately \$35,000,000 over the next two years were outlined to The Associated General Contractors of West Virginia, Inc., at its recent annual meeting by Governor Okey L. Patteson. The meeting was held in Charleston, the state's capital.

Ray E. Ritchie, of Boso & Ritchie, highway and heavy contractors, Ravenswood, West Virginia, was elected president of the organization. He succeeded H. W. Schneider, builder, of Parkersburg, who, as the immediate past president, continued as a member of the chapter's executive committee.

Other officers include: Vice Presidents, Paul Anderson (highway), Charleston; J. D. Higginbotham (building), Charleston; James M. Jarvis (building), Clarksburg; Walter

Seabright (building), Wheeling; and Oscar Vecellio (highway and heavy), Beckley.

Almost All to Contract

Secretary, C. J. Kuhn (building), Charleston; treasurer, W. E. Abbitt (building), Charleston; chairman of building division, C. H. Jimison, Huntington; chairman of the highway and heavy division, Leo Vecellio, Beckley. The associate division of the chapter elected Claude W. Crawford, of the Citizens Coal & Concrete Company, Parkersburg, as its chairman.

Eugene H. Brown of Charleston is the chapter's executive secretary.

Emphasizing that almost all of the state's huge construction program would be let to contract, Governor Patteson said that more than \$25,000,000 might be spent on state highways this year, if the state's anti-

pated revenues are not too sharply reduced by the present economic situation. This was an obvious reference to the sharp drop in state taxes due to unsettled labor conditions in the coal industry.

The governor outlined the building program being undertaken by the State Board of Education for the various state colleges, by the Board of Governors of the University, and by the Board of Control for the state's mental and correctional institutions. The Board of Control, he said, expects to have \$7,000,000 in construction under way at the various institutions in 1950, and all of this program, he said, would be let to contract.

School Building Program

The county school building program contemplated a \$20,000,000 expenditure over a two-year period, the governor stated, with \$7,889,000 already released for 106 projects in 33 counties.

The governor also reviewed plans for the proposed West Virginia Turnpike—now in the planning stage—which, he said, would be built entirely by private contractors.

Welton A. Snow, manager of the Building Contractors' Division of The Associated General Contractors of America, Inc., Washington, reviewed the national construction picture for the year and present conditions in the industry, as well as of the work of the national association in legislative matters.

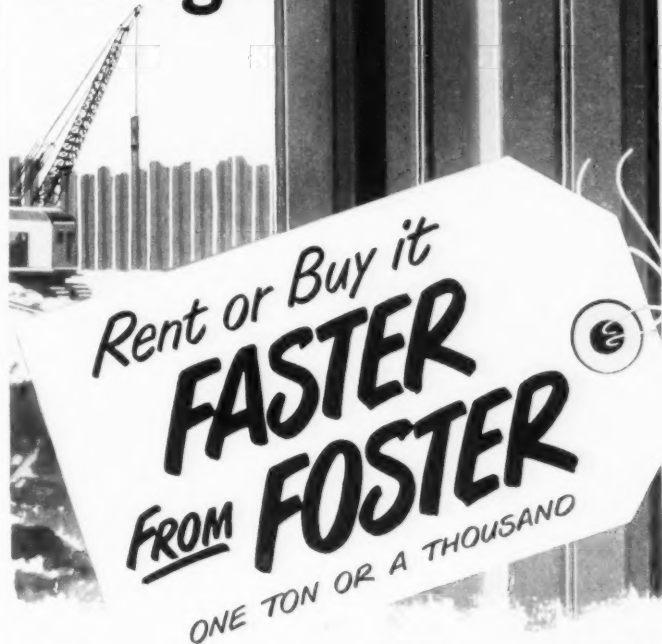
A. N. Carter, manager of A.G.C.'s Highway Contractors' Division, Washington, discussed the work and accomplishments of the several joint cooperative committees.

A total of 162 contractors and guests attended the annual banquet, including many state officials who are directing the state's construction program and the officers and directors of the West Virginia chapter, American Institute of Architects, and the West Virginia Society of Professional Engineers.

ARTHUR T. WARD, SR., for 20 years president of the National Paving & Contracting Co., A.G.C., Baltimore, Maryland, and a long-time member of The Associated General Contractors of Maryland, died late last year at the age of 66. He had been in the construction industry for 35 years, continuously in the highway end of the industry. His wife, two children and two grandchildren survive.

THE CONSTRUCTOR, MARCH 1950

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BID COORDINATION

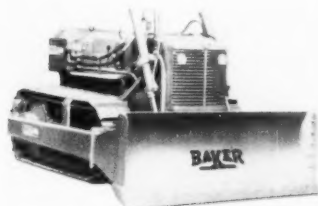
BID OPENING DATES OF LARGE PROJECTS

OPENING DATE	AGENCY	PROJECT
March 15	Corps of Engineers Alaska District Anchorage, Alaska	Inv. No. 895-507-50-7 Complete military installation known as Murphy Dome Proj. near Anchorage
"	Corps of Engineers New Orleans (La.) Dist.	Inv. No. CIVENG 16-047-50-210 Earth embankment, Floodplain Section, Texarkana Dam, Bowie County, Texas
"	Corps of Engineers Portland (Ore.) Dist.	Clearing, regrading, Relocation Southern Pac. RR and Hwy. No. 58 between Stas. 1760 and 2006. Look-out Point Res., Ore.
"	U. S. Atomic Energy Commission	Inv. No. 291-50-34 104 single and multiple dwelling units, consisting of 182 individual housing units.
(Postponed from Feb. 23)	Bureau of Yards & Docks Department of Navy Washington 25, D. C.	NOY 19717, SPECS. 23371 Sabana SECA, Puerto Rico Naval Communications Station, Roads, distribution systems, buildings.
March 15		
March 16	Corps of Engineers Louisville (Ky.) Dist.	Inv. No. CIVENG 15-029-50-63 Dam, spillway, service bridge, access road, Cagles Mill Res.
March 17	Corps of Engineers Seattle (Wash.) Dist.	Inv. No. CIVENG 45-108-50-51 Four 67,368 KVA AC generators, Chief Joseph Dam, Columbia River, Wash.
March 28	Veterans Administration Washington 25, D. C.	SPECS. No. 5000 PROJ. No. 2887 500-bed GM VA Hospital, Cincinnati, O.
March 30	U. S. Atomic Energy Commission	Inv. No. 291-50-46 Hospital at Los Alamos, N. Mex.
(Postponed from Feb. 23)		
March 31	Corps of Engineers Little Rock (Ark.) Dist.	Inv. No. CIVENG 03-050-50-67 Arkansas River bank stabilization between river miles 115.6 and 127.8.
April 7	Bureau of Yards & Docks Department of Navy Washington 25, D. C.	NOY 18953, SPECS. 24727 Electrical receiver terminal equipment buildings, Naval Communications Sta., Wahiawa, Hawaii
April 20	Corps of Engineers Portland (Ore.) Dist.	Concrete gravity section, earth embankment and borrow area, Clearing Lookout Point Dam, Ore.
April 28	Corps of Engineers Garrison District Bismarck, N. D.	Stilling basin and powerhouse foundations, Garrison Reservoir Proj., Missouri River, N. D.

Reporting agencies: Department of the Army, Corps of Engineers; Department of the Interior, Bureau of Reclamation; Department of the Navy, Bureau of Yards & Docks; Bureau of Community Facilities, and Public Buildings Administration of the General Services Administration; Department of Commerce, Bureau of Public Roads; Veterans Administration; U. S. Atomic Energy Commission. State, municipal and private projects reported by The Associated General Contractors of America.

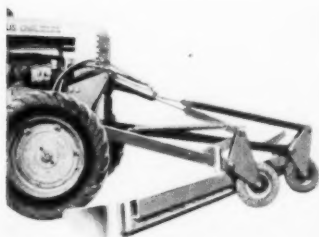
NEW EQUIPMENT • MATERIALS

Bulldozers—*Baker Mfg. Co., Springfield, Ill.* New line of bulldozers and gradebuilders for Allis-Chalmers HD-5 tractors are hydraulically controlled through twin hydraulic cylinders mounted at front of engine frame. Overhead height of mounting is less than that of tractor. Other features are: direct lift with minimum of working and wearing parts; positive down-pressure; finger-tip control; freedom for servicing tractor engine without removing bulldozer mounting; rolling-action blade shape; piston rods chrome-plated for longer life; fully protected front mounted pump. Both bulldozer and gradebuilder are mounted close to radiator. Both are available for standard and wide-gage HD-5 tractors.



Baker bulldozer for Allis-Chalmers HD-5

Windrow Eliminator—*Allis-Chalmers Mfg. Co., Tractor Div., Milwaukee 1.* Accessory unit to new Model D motor grader is hydraulically controlled windrow eliminator, manufactured by Tractomotive Corp. of Deerfield, Ill. It is trailing blade which clears off excess material which grader moldboard piles up along road's edge. Eliminator rides on its own wheels and blade settings are not affected by up and down movement of grader. Unit is mounted on grader frame by 4 heavy bolts and 2 1½" pins. It operates off grader hydraulic system and can be raised and lowered.



Windrow eliminator for Allis-Chalmers Model D motor grader

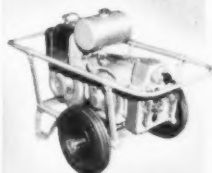
THE CONSTRUCTOR, MARCH 1950

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MODEL M-1
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Capacity 1.25 KVA.
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THE JACKSON VIBRATORY SOIL COMPACTOR

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Excavator—*Thew Shovel Co., Lorain, Ohio.* Lorain TL-25 is $\frac{3}{4}$ -yd. machine. It features turntable design comprising several major components each built as integral unit complete with all sub-assemblies and parts installed. Other features are electric starter and operating lights; 5 identical clutches to control all machine

operations; one-piece, all-welded turntable bed; hook rollers mounted on drop-forged brackets with centralized pressure lubrication; machine-cut internal ring gear; oil-enclosed, machine-cut gears throughout except for 2 intermittently used gears; anti-friction bearings used on all horizontal power shafting and clutch friction drums;

power load lowering. Interchangeable front end boom equipment is provided. Three crawler mountings are available, all 2-speed chain-driven with oil-enclosed propelling mechanism and equipped with ratchet and pawl 4-way tread and travel lock. All crawlers are equipped with 22"-wide drop-forged treads. Speed changes are controlled through 2-speed transmission mounted integrally with turntable engine.

Door Hardware—*Detroit Steel Products Co., 3145 Griffin St., Detroit 11.* Door hardware for "Fenestra" hollow metal entrance door now comes with recently perfected lacquer finish which is resistant to cleaning fluids, acids, scratches and abrasion.

Steel School Window—*Truscon Steel Co., Youngstown 1, Ohio.* Intermediate weight steel window offers increased light effectiveness, economy in original cost and improved maintenance factors from standpoint of window washing and replacement of broken glass, manufacturer states. Window is custom built in widths up to 10'0" and in heights up to 9'0". Large upper fixed light is recommended for glazing with $\frac{1}{4}$ " wire glass in light diffusing pattern. Lower portion, or vision strip, is glazed with $\frac{1}{8}$ " or $\frac{1}{4}$ " clear glass. Alternate glazing possibilities, to meet varying climatic conditions and degree of exposure to direct solar rays, are: double-insulating glass; heat-absorbing glass; non-glare glass. Either or both lower panels may be vented.



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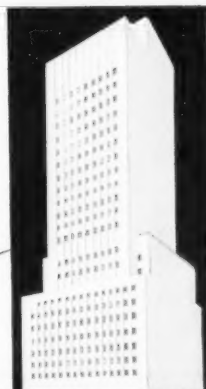
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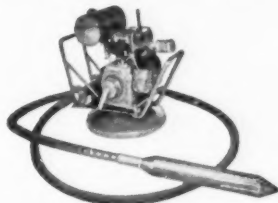
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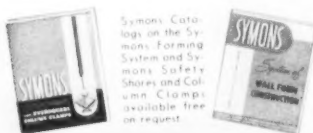
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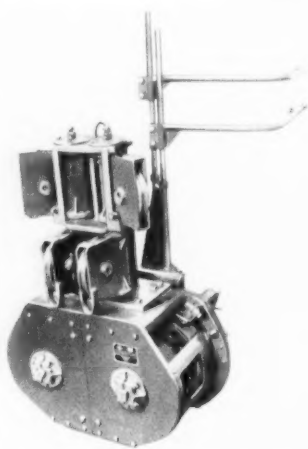
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Power Wheelbarrow—Kwik-Mix Co., Port Washington, Wis. Principal improvement in 1950 model "Moto-Bug" is large steering wheel replacing lever bar arrangement formerly used for guiding unit. Steering gear ratio has been increased from 2 to 1 to 4 to 1. "Moto-Bug" has rated hopper capacity of 10 cu. ft., or 1,200 lbs. on platform body. It is powered by standard $\frac{1}{2}$ h.p. gasoline engine and travels at speeds of $1\frac{1}{2}$ to 4 m.p.h., both forward and reverse. Direction indicator is included with new steering feature.



1950 model "Moto-Bug"

Power Control Units—Kay-Brunner Steel Products, Equipment Division, 2721 Elm St., Los Angeles 65. Three models are offered in new line: C-90D, double drum, for tractors of 50 h.p. and up; C-50D, double drum, for tractors up to 50 h.p.; C-50S, single drum, for tractors up to 50 h.p. C-90DI, is special unit for logging



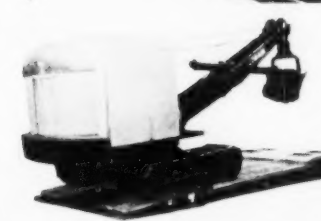
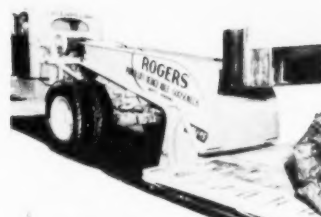
Kay-Brunner power control unit.
Model C-50D

and extra heavy-duty work, featuring extra heavy-duty clutch and cone and special drum and control guards. Features of all machines include alloy, heat-treated cast steel cases and covers; heat-treated, alloy steel gears; roller or ball bearings on all turning parts; high-strength, alloy cast iron clutch and brake drums; cone-type clutch; gear ratios from 5 to 1 up to 12 to 1; swinging fairleads on Models C-90D and C-50D and adjustable control levers. Units can be disassembled or assembled in field without block-and-tackle or hoist. Complete specifications and prices are contained in Bulletin 361-ED, available from manufacturer.

Compressors—Gardner-Denver Co., Quincy, Ill. New line of trailer-mounted portable compressors are designed especially for operating small air tools. Units are furnished complete—air cooled compressor, with V-belt drive to gasoline engine, mounted on pipe tank type base. It is equipped with semi-pneumatic rubber-tired roller bearing wheels, drawbar, trailer hitch and stabilizer leg. Three sizes are available.

Heavy Equipment Trailer—Rogers Brothers Corp., 234 Orchard St., Albion, Pa. Power-lift detachable gooseneck is available on most Rogers trailers from 15 tons capacity up and can be adapted to many Rogers trailers now in use and to some of other makes. Operation of gooseneck is shown in accompanying pictures. In addition to gooseneck feature, design and construction make possible lowering of trailer deck when loaded, to clear overhead obstructions, and raising of deck to clear railroad embankments and other roadbed obstructions. Deck raising and lowering is accomplished by cable-operated ram driven by tractor winch. Design permits using larger diameter tires on rear and shorter and lighter ramps.

Operation of Rogers "Gooseneck" trailer. Pictures (from top) show: A. Loaded trailer with deck in normal position for traveling. B. Cable-operated ram lowering front of trailer to ground for detachment of gooseneck. C. Front end of trailer lowered to ground. D. Tractor with gooseneck, which is supported by hydraulic wheel jack, is moving forward. E. Gooseneck moved forward. Note lifting ram which is operated by cable from tractor winch, also housings into which trailer main beams are inserted when connected. F. Shovel moving down ramps.



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NO. OF FASTENINGS	240	32
TIME REQUIRED	240 HOURS	32 HOURS
COST AT \$2.40 PER HOUR	\$576.00	\$76.80
COST OF MATERIALS	24.00	60.00
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COST SAVED WITH RAMSET SYSTEM		\$463.20
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FASTENING SYSTEM



SEVEN TIMES FASTER than with his old method, this contractor set 240 RAMSET FASTENERS through 2" x 2" x 1/4" steel angles into concrete with RAMSET—at a saving of \$463.00! You can save comparable sums with RAMSET when fastening into steel, concrete, masonry or other hard materials. For proof, ask us for a free Cost Comparison Sheet and put down your actual cost figures. You will see quickly the substantial savings you can make with the light, portable, proven RAMSET TOOL.

RAMSET eliminates slow, costly, tedious drilling, chipping, tapping and plugging. Actual fastening time with RAMSET—less than one minute per fastener with any of the 65 types and sizes of plated RAMSET FASTENERS.

In 20 seconds, RAMSET can be loaded, ready for use. Place the Tool against the work—and RAM! The fastener is SET!—tight and right. RAMSET requires no complicated methods or separate small parts that can be lost or forgotten. RAMSET TOOLS may be cleaned and reassembled in less than five minutes, to keep them at top operating performance.

A 15-minute demonstration will show you how much time, money and trouble RAMSET can save. Call your local RAMSET representative today or ask us for details and free Cost Comparison Sheet.

Ramset System

SAVES TIME . . . CUTS COST
ON JOBS LIKE THESE:

Fastening—

- Wood sills to concrete foundations or walls.
- Wood nailing strips.
- Wire mesh for gunite.
- Metal or composition roofs or walls.
- Guard fences or scaffolds.
- Framework, brackets and supports to concrete or steel.

STEMCO CORPORATION
12117 BEREA RD. • CLEVELAND 11, OHIO

Crushing and Screening Plants
Iowa Manufacturing Co., Cedar Rapids, Iowa. "Hawkeye" series is designed to produce low-cost gravel for road maintenance and small concrete structure jobs. Plant is portable, with nothing to set up or take down when transporting. Depending on local conditions and specifications, plant produces between 50 and 75 tons of material per hour. "Hawkeye" is made up of standard "Cedarapids" parts consisting of hopper, feeder and feed conveyor; horizontal vibrating screen; bucket elevator and return conveyor; sand and delivery convey-

ors; and choice of 4 sizes of either plain or roller bearing jaw crushers, 10"x16", 10"x20", 10"x24", or 12"x16" twin jaw crusher. Described in Bulletin Hawk 1, available from manufacturer. • New single pass crushing and screening plant, made up of standard "Cedarapids" units, is designed for moderate sized jobs. Recommended for use where material is screened into only one size, plant can be set up close to job site. It consists of reciprocating, clutch-controlled feeder and 6'x6' charging hopper with adjustable feed gate; single deck horizontal vibrator screen, 24'x8'; jaw crusher with

10"x16", 10"x20" or 10"x24" jaw opening (plain or roller bearing); and 25' delivery conveyor. All units are mounted on steel wheeled or pneumatic tired truck. Fully described in Bulletin SPP-1, available from manufacturer.



Iowa's "Hawkeye" crushing and screening plant



Cedarapids single pass plant

Tungsten Carbide Bit Attachment
Ingersoll Rand Co., 11 Broadway, New York 4. Attachment is designed to resist shock and impact while pre-



Ingersoll-Rand attachment for tungsten carbide bits.

CENTRAL SURETY
Is Licensed
in All States



Qualified With
United States
Government

CENTRAL SURETY AND INSURANCE CORPORATION

CONDENSED FINANCIAL STATEMENT, DECEMBER 31, 1949

ADMITTED ASSETS	
Cash in Banks and Office	\$ 1,115,206.43
Bonds:	
U. S. Government	\$6,411,404.91
State, County and Municipal	8,941,863.74
Federal Banks	295,000.00
	15,648,268.65
Total Cash and Bonds	\$16,763,475.08
Central Surety Fire Corporation Stock	591,886.64
Mortgage Loans on Real Estate	5,490.31
Premiums in Course of Collection (not over 90 days)	1,854,053.57
Accrued Interest on Investments	107,165.42
Other Admitted Assets	63,647.91
TOTAL ADMITTED ASSETS	\$19,385,718.93

LIABILITIES	
Reserve for Claims	\$7,333,160.60
Reserve for Unearned Premiums	5,326,539.29
Total Claim and Premium Reserves	\$12,659,699.89
Reserve for Commissions, Taxes and Other Liabilities	1,328,418.14
Total Reserves	\$13,988,118.03
Capital	\$2,000,000.00
Surplus	3,397,600.90
Surplus to Policyholders	5,397,600.90
TOTAL	\$19,385,718.93

Securities carried at \$1,114,332.91 in the above statement are deposited for purposes required by law.
Bonds are carried at amortized values. No bonds were in default either as to principal or interest at December 31, 1949.

HOME OFFICE KANSAS CITY, MISSOURI
R. E. MCGINNIS, President

CENTRAL SURETY PROTECTION is Written Through Licensed Agents and Brokers Only

NEW EQUIPMENT • MATERIALS

venting slippage, excessive thread wear or loss of drilling speed. It is of shoulder type employing patented 38° reverse-buttress thread. Effect of matching 38° surfaces in bit and on attachment is to cushion and absorb reciprocating and rotational forces. Four sizes of attachments are offered to cover bit gage sizes from 1 3/8" to 3".

Equipment Steam Cleaner—Hyp pressure Jenny Division, Homestead Valve Manufacturing Co., Coraopolis, Pa. "Super-Duty Hypressure Jenny" steam cleaner with 300 gals. capacity per hour will operate from one to 4 cleaning guns. Full operating pressure is reached within 2 minutes from cold start. It is made in trailer-mounted, portable and stationary models. Standard equipment includes one 1 1/2" "Hypower" cleaning gun, one 25' length each of 1 1/2" and 3/4" vapor hose and choice of gasoline engine or 1 h.p. electric motor. It weighs approximately 1,600 lbs. and measures 18" wide, 14" high and varies in length from 78" to 132", depending on model. Machine may also be used for heat transfer uses with heat output equivalent to 25 h.p. boiler. It can be used for such jobs as heating tanks of viscous fluids, thawing frozen ears and culverts, etc. Fully described in catalog folder, SUP-100, available from manufacturer.



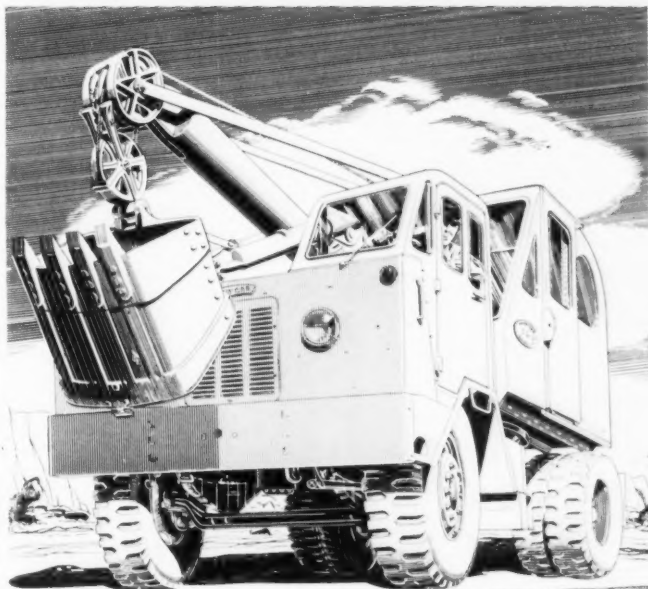
"Super-Duty Hypressure Jenny" steam cleaner

PRESTRESSED CONCRETE

A rational method of construction for elevated express highways, heavy underpasses, underground garages, containers and ducts carrying liquids.

L. COFF, Consulting Engineer, 198 Broadway, New York 7, N. Y., Cortland 7-2753

For Sale: Athley Force-Fred Loader in Excellent Condition, just Repainted, and Used Barber-Greene Spreader in shop now for Overhaul and Paint Job. Brown Paying Company, Lexington, N. C.

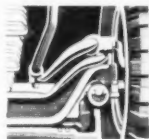


Any MICHIGAN owner will tell you

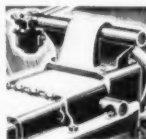
—why he bought a Michigan Truck Excavator. It could have been Michigan's famous mobility . . . the heavy duty Michigan truck chassis . . . high yardage through air controlled clutches . . . cast steel turntable base . . . hook rollers . . .

But why not let a Michigan owner tell you in his own words. Your local Michigan dealer welcomes the opportunity to show you the most complete line of 3/8 and 1/2 yard excavators available. It will pay you to get in touch with him today.

MICHIGAN
POWER SHOVEL COMPANY
485 Second Street
Benton Harbor, Michigan, U.S.A.



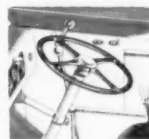
EASY STEERING
Heavy duty worm and roller steering gear, 20-inch steering wheel, minimize steering fatigue and help you thread through traffic easier, get around on the job faster.



EASY SHIFTING
Smooth meshing gears, no "fighting" the shift-lever or clutch pedal. Auxiliary transmission provides multiple speed range for every highway condition, for tough off-the-road travel.



POSITIVE TRACTION
Big, traction-tread tires easily pull you through deep sand, mud or heavy snow without delays. Their high flotation takes you over soft ground with far less chance of bogging down.



COMFORTABLE CAB
Operators like it! Plenty of leg and elbow room for big men. Wide angle visibility through big, rubber-set windshield and windows. Familiar, automotive-type controls.

Electric-Driven Plaster Mixers—*Essick Manufacturing Co., Los Angeles.* Electric drive is offered on "De-luxe" and "Thru-A-Door" mixers. Driving power is provided by General Electric "Tri-Clad" single-phase capacitor motor rated at 3 h.p., 1,720 r.p.m., 115-230 v, 60 cycles. Power is transmitted from motor to paddle-shaft of mixer through completely enclosed transmission running in oil. Gear reduction unit reduces speed so that paddles turn at 34 r.p.m.

Oil Clarifier—*W. G. B. Oil Clarifier, Inc., Kingston, N. Y.* New lineless replacement oil clarifier, for use with trucks, tractors or other equipment equipped with base-mounted oil filters, is designated as "W. G. B. Tri Series." It can be mounted on single or multiple oil filter base and uses standard W. G. B. T-108 replacement oil filter cartridge. Cartridge, which can be changed without tools, is made of specially processed fine cotton.

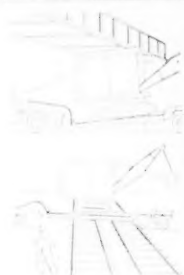
Magnesium Concrete Forms—*Symons Clamp & Manufacturing Co., 4250 Diversey Ave., Chicago 39.* Magnesium forms are especially recommended for foundations because of following features: light weight—panel weighs less than 3 lbs. per sq.



Symons magnesium wall form

ft.; panel does not swell when wet or contract when dry; will not rust; facing, $\frac{3}{16}$ " thick. Single wall form unit has facing of $\frac{3}{16}$ " Z1 magnesium alloy welded to rectangular frame with crosspieces every 12" made from extruded $\frac{3}{16}$ " magnesium FS alloy. Unit is "Heliaire" welded and annealed to relieve welding stresses. Units are made in 2'x4', 2'x6', 2'x8' sizes. Units are connected with flat steel connecting bolts, 2 walls forming pouring space and are held in alignment with Symons slip water tie. Walers, which hold entire wall unit in line, consist of 2x4's held in place by "U" plates, water ties and tightening wedges. In addition to wall form units, inside and outside corner sections made of magnesium are offered, and filler frames cut from extruded $\frac{3}{16}$ " magnesium FS alloy. Symons also manufactures combination form utilizing magnesium frame (extruded $\frac{3}{16}$ " FS alloy) and plywood "facing" which weighs about 1 lb. per ft. more than all magnesium form.

The ROGERS 4-FEATURE POWER-LIFT DEMOUNTABLE GOOSENECK



STOOPS TO CLEAR LOW OVERHEAD OBSTRUCTIONS

RAISES ITS DECK TO CLEAR HIGH BANKED CROSSINGS



EMBODYING A NEW AND VALUABLE FEATURE IN TRAILER SERVICE

It embodies the kind of versatility that makes every haul easier, faster, more profitable.

Loading, at a lower angle, is faster. Larger tires carry heavier loads legally. Unloading, reloading, detouring are avoided through quick adjustment of the deck height to different conditions encountered.

It's equally as rugged as the standard Rogers Gooseneck regardless of its detachable feature. And it's available on most Rogers Trailers and adaptable to many trailers of other makes.

Bring your equipment up-to-date and be in a position to handle operations more efficiently and more profitably.

Export Office: 50 Church St., N. Y. 7, N. Y. • Cable Address: "Brosites"

ROGERS TRAILERS

EXPERIENCE builds 'em



PERFORMANCE sells 'em

ROGERS BROTHERS CORPORATION, 223 Orchard St., ALBION, PA.

Shunk

Superior Quality

BLADES AND CUTTING EDGES

For any make of machine:
Motor Graders, Motor
Scrapers, Scrapers, Dozers,
Backhoes, Backfillers,
Wagon Scrapers, Trail
Builders, Trail Bladers,
Carrioles, Also—

CUTTING EDGES
WEARING BOOTS
BACK SLOPERS
EXTENSION BLADES
MOLDBOARDS
and
SCARIFIER TEETH

50 years of manufacturing blades has developed for you a special steel, milled through our own rolls and forged at the edges to give that extra wearing quality you need.

All widths, lengths and thicknesses. **SALES** and **REPAIR** to all types of machines.

Consult your international ally recognized Blade Specialist. Write for special literature giving type and name of machine you operate—get set for blades easily.





Shunk

MANUFACTURING COMPANY

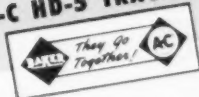
Established 1854
BUCYRUS, OHIO



NEW BAKER

Engine-Mounted Bulldozer and Gradebuilder

FOR THE A-C HD-5 TRACTOR



Here's a rugged, new combination . . . a perfect matching of tractor and blade for long-life and low-cost earth-moving. There are all the Baker features and advantages you expect and *get* in Baker design . . . direct lift with a minimum of working and wearing parts, positive down-

pressure, full service accessibility for tractor, high lift, low overhead, reliable, protected front pump, chrome-plated piston rods for long life of rods and packings. See one, try one at your Baker distributor today.

BAKER MFG. CO. . . . Springfield, Ill.

Bulldozers

Gradebuilders

Snow Plows

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**WELLPOINT
SYSTEMS**

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GRIFFIN WELLPOINT CORP.

881 EAST 141st ST. • NEW YORK 54, N. Y.
Phones: MEIrose 5-7704-5-6

Spring is in
the AIR...



AND CONTRACTS WILL BE A'LETTING!

Yes, Spring is approaching and its arrival will be marked by contract letting and acceleration of jobs under way.

Since profitable operations today are more dependent than ever before upon efficient tools, alert contractors will be giving thought to the purchase of essential new equipment.

In this connection you should have a copy of the new Owen Catalog. It not only illustrates and describes the comprehensive line of Owen Buckets and Grapples but contains many photos of equipment applications that will be interesting and helpful.

Write today for your copy.



THE OWEN BUCKET CO.

7750 BREAKWATER AVE., CLEVELAND 2, OHIO

Branches

New York • Philadelphia • Chicago • Berkeley, Calif.

Admix Meter for Pavers—Kochring Co., 3026 W. Concordia Ave., Milwaukee 10. Meter is designed for installation on Kochring 16-E or 31-E "Twinbatch" pavers. It is also suitable for use in connection with water batchers in ready-mix or central-mix plants. Meter automatically measures predetermined quantity of liquid air-entraining agent into concrete batch.

Movement of paver skip actuates meter. Capacity is adjustable from $1\frac{1}{2}$ to 20 fluid oz. in $\frac{1}{16}$ th oz. increments. A 40 gal. supply tank is included along with all necessary operating linkages. Meter can be furnished with all new "Twinbatch" pavers or it can be installed in field. Meter directs air-entraining agent into mixing drum with water.

Vest Pocket Telescope—Pan-technics, Ltd., Encinitas, Calif. Small telescope, weighing 2 oz., 5" long, clips in pocket like fountain pen. It has 6 power magnification—field, 315' at 1,000 yds. It is recommended for checking grade stakes, elevation heights, centerline marker flags.

MARTIN BOLTED GRAIN TANKS ASSURE EXTRA PROFITS to contractors!



- Heavy gauge galvanized steel, all bolted construction for easy, speedy erection.
- Ratproof, fireproof, permanent safety for large capacity storage.
- Can be erected on any hopper or dragway foundation.
- A size for any need.
- Low maintenance costs and many convenience features makes them easy to sell!
- Approved by Commodity Credit Corporation for storage occupancy agreements.

Contractors throughout the corn and grain belts now have an opportunity to cash in on the EXTRA profits possible with Martin all-steel BOLTED Grain Tanks. You can profit because these permanent storage units are easy to erect, and by dealing directly with the manufacturer. Huge corn and grain surpluses all over America have created a ready market for SAFE permanent storage units. Every country elevator in a

critical grain storage area is a prospect. And FAST, two-way profits are YOURS . . . with Martin all-steel BOLTED Grain Tanks. Experienced engineering assistance available without charge or obligation. Write today for full information!

STEEL MARTIN BILT

Martin Steel Products Corp.
344 Longview Ave. Mansfield, Ohio



"Penscope"

Plywood Form Calculator

A new slide rule calculator, known as the Keely plyform calculator, to facilitate design and construction of plywood concrete forms, is now available from the Douglas Fir Plywood Association. The instrument provides data on proper plywood thickness, spacing and size of studs, wales and ties, based on hourly rate of pour. Operated as a slide rule, it calculates for both vibrated or unvibrated concrete at both 50 and 70 degrees F.

The calculator developed by Hal Keely, Pittsburgh plywood distributor, is a new and improved version of a similar instrument which was introduced before the war. Measuring 3" x 8", the calculator is printed in three colors on durable plastic. Also included with the calculator is a small folder of design assumptions by M. L. Elkins, registered professional engineer of Richland, Wash., who prepared the instrument.

The calculators with folder are offered at \$1.00 each by the Douglas Fir Plywood Association, Tacoma 2, Wash.

Obituary

L. A. Ginzler, secretary and advertising director of The Baker Manufacturing Co., died January 17 after an illness of several months. Mr. Ginzler had been associated with the company since its incorporation 11 years ago.

NEW LITERATURE

Powder Actuated Tool—*Stemco Corp., Cleveland 16.* Leaflet, Form 35 (A.I.A. File 17F), describes "Ram-set" fastening system, picturing 2 sizes of tools for light and heavy-duty work, and listing 65 different fasteners available for various applications.

Shovel-Cranes—*Link-Belt Speeder Corp., Cedar Rapids, Iowa.* Catalog 2322 contains applications, construction details and specifications of new HC-51 truck-mounted shovel crane with "Speed-o-Matic" hydraulic controls.

Engines—*Caterpillar Tractor Co., Peoria 8, Ill.* Booklet, "Cat" Engines on the Construction Job (Form 12679), discusses power requirements for excavators, compressors, electric equipment, pumps, ditchers, rollers and movable forms. Specifications on complete line of Caterpillar diesel engines are included.

Paver—*Kochring Co., 3026 W. Concordia Ave., Milwaukee 19.* Catalog presents 16 E "Twinbatch," pointing out special features and giving comparative production and capacity chart, detailed dimensions and specifications.

Torque Converter—*Detroit Diesel Engine Division, General Motors Corp., 14400 W. Outer Drive, Detroit 28.* Booklet, *The New General Motors Diesel Engine—Torque Converter Unit*, explains how torque converter functions and presents its advantages—freedom from shock loads, freedom from stall with overload, operating economy, ease of handling, little to wear out. It describes installations in tractors, off-highway vehicles, cranes, excavators, locomotives. Industrial vehicle engines and industrial units are pictured and performance figures presented. Accessories are described.

Concrete Vibrators—*Mall Tool Co., 7720 S. Chicago Ave., Chicago 19.* Complete line of Mall concrete vibrators is presented in new catalog. It is fully illustrated and gives complete specifications of various models available. Featured are new models of vibrator power units. New method of connecting flexible shafts in various lengths is described. Increased h.p. is announced for several power units. New shafts and housings are equipped with pipe thread details to simplify ordering.

HELTZEL



SUPERIOR ROAD & AIRPORT

Forms

Compare Heltzel forms with any other. Point for point Heltzel forms are outstanding in construction features and on-the-job advantages. Like all good equipment, they afford economies in working time while assuring a better job.

- HEAVY DUTY ROAD FORMS
- MILITARY HIGHWAY FORMS
- DUAL DUTY AIRPORT-HIGHWAY FORMS
- ISLAND AND CATCH BASIN FORMS
- ROAD FORM ATTACHMENTS



TEST PROVEN—State highway tests show Heltzel builds better forms. Average results prove Heltzel 20% better.

JOB PROVEN—Veteran Heltzel forms can be seen on many jobs—they last longer. They don't wiggle and weave under pressure and movement of heavy equipment—they stake firmly and carry the load.

HELTZEL DUAL DUTY FORMS



Each dual duty form can be used to make two thicknesses of concrete slabs. Illustration above shows same form in upright position for 24" slab and side position for 20" slab. Sizes from 8' up.

Get details
**WRITE FOR
BULLETIN**

HELTZEL STEEL FORM & IRON CO.
WARREN, OHIO, U. S. A.

Please send information regarding:

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HELTZEL

STEEL FORM & IRON CO.
WARREN, OHIO • U. S. A.

NEW LITERATURE

Loader—J. D. Adams Manufacturing Co., Indianapolis. New catalog (Form 1914) presents "Traveloader," which picks up and loads windrowed material. Illustrations and text explain how machine works, how it is used and emphasize features that appeal to operators. Details of machine's feeder, conveyor and frame are given. Heavy-duty drive unit is fully described. Specifications are given.

Truck Mixers—Chain Belt Co., 1625 W. Bruce St., Milwaukee 4. Bulletin 50-10 illustrates and describes "Rex" horizontal "Moto-Mixers" and new "Rex Adjusta-Hite" discharge "Moto-Mixers." Cut-away views, job illustrations and dimensional drawings explain features of mixers. Fluid-drive couplings with "Rex" chain drum drive and transmission are explained and illustrated. Complete table of speci-

fications and mounting dimensions for all sizes of machines is given.

Ditchers—Gar Wood Industries, Findlay Division, Dept. 022, Findlay, Ohio. Features and applications of Buckeye Models 120 and 160 service ditchers in deep sewer and water ditching are presented in new catalog.



McKIERNAN-TERRY Ruggedly-Built PILE EXTRACTORS

Provide exceptional pulling power, with the sharp energy of blow needed to vibrate and loosen stubbornly set piling. These double-acting extractors come in two standard models—heavy and extra heavy. Standardized line also contains 10 double-acting hammers and 5 single-acting hammers. Write for free Bulletin.

Also builders of coal and ore bridges, bulk material unloaders, bridge operating mechanisms, hoists and marine equipment, and specially designed machinery.

McKIERNAN-TERRY CORPORATION

Manufacturing Engineers 18 Park Row, New York 7, N. Y.

The **PENSCOPE**

6 POWER TELESCOPE FOUNTAIN PEN SIZE!



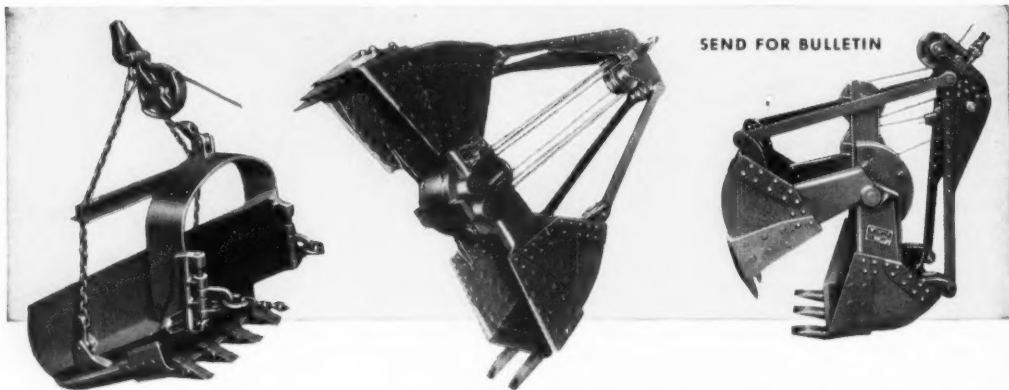
A hundred uses on any construction job . . . checking grade stakes, elevation signs, centerline marker flags. Weighs only 2 ounces, 5 inches long, and clips in your pocket like a fountain pen. Full 6 power magnification—field, 315 feet at 1000 yards. Coated precision-ground optics are fully corrected for spherical and color aberration, coma, and astigmatism—like fine transit lenses.

Weights only 2 ounces
\$10.00 Postpaid
No Federal Tax

Money-back Guarantee

PAN-TECHNICS, LTD.

Encinitas 2, California



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For Longer Life!
WELLMAN
Williams Type **BUCKETS**

• Count on longer life and more efficient service . . . due to Wellman original **welded rolled steel construction**. You get the maximum digging power, and exceptional strength—without excessive weight! Specify Wellman, and you'll specify the best bucket for your purpose.

THE WELLMAN ENGINEERING COMPANY
7015 CENTRAL AVENUE CLEVELAND 4, OHIO

NEW LITERATURE

Combination Electric Hammer and Drill—*Wadack Electric Tool Corp.*, 4627 W. Huron St., Chicago 44. Illustrated leaflet presents "Do-All" combination electric hammer and drill, and explains its advantages in working in concrete and masonry. Details of tool are explained and illustrated, and its capacities are given.

Hoists—*American Hoist & Derrick Co.*, 63 S. Robert St., St. Paul 1. Two new catalogs cover line of American "General Purpose" hoists. They are illustrated with operating pictures and illustrations of mechanical parts and assemblies. Catalog 100-H-40 covers hoists from 5 to 40 h.p. Catalog 100-H-55 presents hoists from 50 to 100 h.p.

Safety Equipment—*General Scientific Equipment Co.*, 2700 W. Huntingdon St., Philadelphia 32. Catalog, *Everything in Safety*, presents 1950 line of personal protective equipment and industrial safety devices. Included are respiratory devices, eye protection, hats, gloves, carbony pumps, drum pumps and miscellaneous industrial safety equipment.

Earthmoving Conference

An Earthmoving Industry Conference will be sponsored by the Central Illinois Section of the Society of Automotive Engineers in Peoria, Ill., April 11 and 12. Invitations have been extended to 2,000 men representing over 50 companies engaged in the manufacture and supply of earthmoving equipment in the north central states area.

R. G. LeTourneau, president of R. G. LeTourneau, Inc., Peoria, will deliver the keynote address, "The Early History of the Earthmoving Industry." At the three sessions of the conference the speakers will be: Robert Bourne, manager of export sales, Colorado Fuel and Iron Co., who will talk on grader, scraper and bulldozer cutting edge uses and requirements; Emil Norchius, consulting engineer for Allis-Chalmers Manufacturing Co., will discuss infinitely variable transmissions; R. M. Schaefer, chief engineer in charge of commercial transmission department, Allison Division, General Motors Corp., will talk on hydraulic transmissions.

High Efficiency! Doors roll overhead, clear the entire opening.



Extra Space! All floor, wall, and ceiling space is always usable.

Convenience! Smooth, easy, upward action saves time and labor.

Do
YOUR
Doors
Give
You
These
KINNEAR
Values
?

Safe from Damage. Open out of way, safe from wind or vehicles!

Extra Protection. All-metal curtain repels fire, theft, wind.

Extra Durability. Strong, resilient curtain takes more punishment.



Longer-Lasting! Many Doors in steady use 40 years or more.



Low-Cost Repairs. Slats individually replaced if damaged.



Any Size! Each door built to meet individual requirements.

Kinnear Rolling Doors are easily equipped with Kinnear Motor Operators for highest convenience and efficiency. Pushbutton controls can be provided at any number of convenient points—a feature that not only saves manpower but also reduces heating and air-conditioning costs by encouraging prompt door closure. Every door is specially fitted to the individual opening. Easily installed in new or old buildings. Write for details and estimate on your door requirements.

THE KINNEAR MANUFACTURING CO.

Factories: 650-80 Field Ave., Columbus 16, Ohio
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Saving Ways in Doorways

KINNEAR
ROLLING DOORS

SLOANE QUANTITY SURVEYS

For
All Classes of Construction

**We Maintain a Large Staff
of Engineers Which Assures
Speed—Accuracy—Full Detail
Reasonable Prefixed
Charges**

Approved by
Associated General Contractors of
America and Federal, State and
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**Our 65th Year of Service
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Contract Bonds

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for Contractors

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AMERICAN SURETY COMPANY
NEW YORK CASUALTY COMPANY
SURETY FIRE INSURANCE COMPANY
100 Broadway New York 5, N. Y.
Agents and Brokers Everywhere

MANUFACTURERS' NOTES

MALL TOOL Co. announces the purchase of Hornet Industries, Ltd., Guelph, Ontario, Canada, chain saw manufacturer. Manufacture of Hornet chain saws and service of all "H.J.," "D" and "D.J." models will be continued by Mall through its subsidiary, Mall Tool, Ltd., Toronto.

Philip A. Norton, sales manager of WISCONSIN MOTOR CORP., has been elected president of the Internal Combustion Engine Institute. He succeeds H. W. Smith, manager of engine sales, Caterpillar Tractor Co. The institute is a national organization established for the advancement of this specialized industry.

New tool introductions and accelerated merchandising programs for 1950 were highlights of the annual sales meeting of SKILSAW, INC., held in Chicago in January. Backing up the meeting theme, "A bigger cut in 1950," several new "SkilTools" were presented to 92 men gathered from Skilsaw's 33 branches in the United States and Canada. Modernized versions of many tools were also shown.

J. V. Doll has joined MACK-INTERNATIONAL MOTOR TRUCK CORP. as vice president, fleet sales, and as special assistant to H. W. Dodge, executive vice president. For the past 20 years Mr. Doll has been associated with the Texas Company as manager of its national sales division.

UNIVERSAL ENGINEERING CORP. gave its sales organization, engineering staff and management group a four-day training course at the Cedar Rapids plant in January. The course included a detailed analysis of every product in the Universal line, with time devoted to each phase of manufacture, field experiences, distributor problems and new developments. Purpose of the school was to train district sales representatives, to bring to management and engineering staff reports from the field, and increase the company's service to distributors, and in turn to owners of Universal equipment.

Joe H. Serkowich has been appointed advertising manager of R. G. LeTOURNEAU, INC., succeeding Eugene E. Weyeneth, who resigned to accept a position with McGraw-Hill Publishing Co. Lloyd Rager has been named assistant advertising manager. Steve Czerwinski, advertising coordinator,

has been named sales promotion supervisor, succeeding Vernon E. Pray, who resigned to become advertising manager of Schield-Bantam Co. Leland B. Adams succeeds Mr. Czerwinski.

Fred L. Doolittle has been appointed vice president and general sales manager of PENNSYLVANIA-DIXIE CEMENT CORP. E. P. Newhard has been named vice president and operating manager, Johan Norvig, director of engineering and Stewart H. Dewson, chief engineer.

Don Anderson has been named sales manager of the pump department of THE JAEGER MACHINE CO. A. C. Saxe, manager of the pump department, will continue to direct all engineering service and development work.

Howard T. Conrey has been appointed manager of domestic distributor sales and service division of CONTINENTAL MOTORS CORP. A. S. Bolt-house continues as manager of export sales and service.

JOSEPH T. RYERSON & SON, INC., has begun construction of a new steel service plant and office building in Cincinnati. It will have a total floor space of 165,000 square feet. The Ryerson Company operates 12 other steel service plants serving practically all sections of the nation.

P. H. McManus has been appointed general sales manager of TEMPLETON, KENLY AND CO.

Perlite Standards

Standards to guide perlite miners and processors were established by the newly organized Perlite Institute at a three-day meeting held in Colorado Springs, Colo., recently. Based on the recommendations of the Technical Committee, agreement was reached on the density range and size graduation which processors would meet for plaster aggregate. It was announced that the American Standards Association would publish its specifications for perlite plaster aggregate soon under A.S.A. Specification A12.1-1946. The institute approved expenditure of funds necessary for additional fire tests of perlite plaster to supplement previous tests on perlite by the Underwriters' Laboratories and others.

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Asphalt Plants (Portable)

Iowa Mfg. Co.
White Mfg. Co.

Axles (Truck)

Eaton Mfg. Co., Axle Division

Backfillers

Bucyrus-Erie Co.
Cleveland Trencher Co.
Harnischfeger Corp.
Parsons Co.

Batches

Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.
Winslow Scale Co.

Bearings (Anti-Friction, Tapered Roller)

Timken Roller Bearing Co.

Bearings (Roller)

Timken Roller Bearing Co.

Bins

Blaw-Knox Division
Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.
Universal Engineering Corp.
Winslow Scale Co.

Bits (Detachable Drill)

Ingersoll-Rand Co.

Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)

Shunk Manufacturing Co.

Bridges

American Bridge Co.

Bridges (Multi-Plate Pipe or Arch)

Armco Drainage & Metal Products

Buckets (Clamshell & Dragline)

Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Owen Bucket Co.
Pettibone Mulliken Corp.
Wellman Engineering Co.

Buckets (Concrete)

Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
Jaeger Machine Co.
Owen Bucket Co.

Building Papers

Siskrafft Co.

Buildings (Steel)

Allied Structural Steel Cos.
American Bridge Co.
Armco Drainage & Metal Products
Clinton Bridge Works
Gage Structural Steel Co.
Macomber, Inc.
Midland Structural Steel Co.
Smooth Ceilings System
Truscon Steel Co.

Bulk Cement Plants

Blaw-Knox Division
Heltzel Steel Form & Iron Co.

Bulldozer Blades

Shunk Manufacturing Co.

Bulldozers

J. D. Adams Mfg. Co.
Baker Mfg. Co.
Bucyrus-Erie Co.
R. G. LeTourneau, Inc.

Cableways and Wire Rope

A. Leschen & Sons Rope Co.

Car Pullers

Clyde Iron Works

Car Rerailers

Pettibone Mulliken Corp.

Ceilings

Smooth Ceilings System

Cement

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Universal Atlas Cement Co.

Cement (Air-Entraining)

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Universal Atlas Cement Co.

Cement (High Early Strength)

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Universal Atlas Cement Co.

Cement (White)

Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)

Dixon Valve & Coupling Co.

Column Clamps

Symons Clamp & Mfg. Co.

Compressors

Allis-Chalmers Co.
Ingersoll-Rand Co.
Jaeger Machine Co.

Concrete Curing Material

Siskrafft Co.

Concrete Mixers, Pavers, Tampers

Chain Belt Co.
Construction Machinery Co.
Foote Co.
Jaeger Machine Co.
Knickerbocker Co.
Koehring Co.
Kwik-Mix Co.
T. L. Smith Co.
Worthington Pump & Machinery Corp.—Ransome Div.

Concrete Placing Equipment

Electric Tamper & Equipment Co.
Jaeger Machine Co.

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BUYERS' GUIDE

Concrete Vibrators

Electric Tamper & Equipment Co.
Ingersoll-Rand Co.
White Mfg. Co.

Conveying Machinery

Chain Belt Co.
Iowa Mfg. Co.
Link Belt Co.
Universal Engineering Corp.

Couplings (Hose)

Dixon Valve & Coupling Co.

Cranes

Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.
Koehring Co.
R. G. LeTourneau, Inc.
Link Belt Speeder Corp.
Michigan Power Shovel Co.
Northwest Engineering Co.

Crushing Machinery

Allis-Chalmers Co.
Austin-Western Co.
Iowa Mfg. Co.
Universal Engineering Corp.

Culverts

Armco Drainage & Metal Products

Cutters (Abrasive)

Skidaw, Inc.

Cutters (Tile)

Wodack Electric Tool Corp.

Decking (Roof Steel & Aluminum)

Macomber, Inc.

Derricks

Clyde Iron Works

Dippers

Pettibone Mulliken Corp.

Doors (Bi-Folding, Wood or Metal)

Kinnear Mfg. Co.

Doors (Hollow Bronze, Aluminum, Stainless Steel)

Newman Brothers, Inc.

Doors (Overhead Type, Wood or Metal)

Kinnear Mfg. Co.

Doors (Rolling Metal)

Kinnear Mfg. Co.

Doors (Steel)

Ceco Steel Products Corp.
Detroit Steel Products Co.
Truscon Steel Co.

Doors (Wood, Fireproof)

Fox Bros. Mfg. Co.

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Elliot Machine Corp.
Harnischfeger Corp.
Northwest Engineering Co.

Drilling Machinery (Pneumatic)

Ingersoll-Rand Co.

Drills (Blast Hole)

Bucyrus-Erie Co.
Ingersoll-Rand Co.

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Ingersoll-Rand Co.
Skidaw, Inc.
Wodack Electric Tool Corp.

Dump Bodies

Anthony Co.

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Chain Belt Co.
Iowa Mfg. Co.
Link Belt Co.
Universal Engineering Corp.

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Caterpillar Tractor Co.
Continental Motors Corp.
International Harvester Co.
Murphy Diesel Co.
Wisconsin Motor Corp.

Engines (Air-Cooled)

Continental Motors Corp.
Wisconsin Motor Corp.

Engines (Diesel)

Detroit Diesel Engine Division
Harnischfeger Corp.
Ingersoll-Rand Co.
Murphy Diesel Co.

Entrances (Bronze, Aluminum, Stainless Steel)

Newman Brothers, Inc.

Excavating Machinery

J. D. Adams Mfg. Co.
Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Harnischfeger Corp.
Koehring Co.
Link-Belt Speeder Corp.
Michigan Power Shovel Co.
Northwest Engineering Co.

Expansion Joints

Laclede Steel Co.

Fasteners (For Steel, Concrete)

Steneco Corp.

Finishing Machines (Bituminous)

Blaw-Knox Division
Foote Co.

Finishing Machines (Concrete)

Blaw-Knox Division

Floor Construction

Smooth Ceilings System

Flooring

Truscon Steel Co.

Form Accessories

Economy Forms Corp.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.
Williams Form Engineering Corp.

Forms (Concrete)

Carl Besch Co.
Blaw-Knox Division
Douglas Fir Plywood Assn.
Economy Forms Corp.
Heltzel Steel Form & Iron Co.
Joseph T. Ryerson & Son, Inc.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.

Gasoline Heaters

Behlen Manufacturing Co.
Herman Nelson Corp.

Generating Sets (Electric)

Caterpillar Tractor Co.
Murphy Diesel Co.

Grader Blades

Shunk Manufacturing Co.

Graders

J. D. Adams Mfg. Co.
Allis-Chalmers Tractor Div.
Austin-Western Co.
Caterpillar Tractor Co.
Euclid Road Machinery Co.
Galton Iron Works & Mfg. Co.
Koehring Co.

Grain Tanks

Martin Steel Products Corp.

Grapplers (Rock)

Owen Bucket Co.

Gravel Plants (Portable)

Iowa Mfg. Co.

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Newman Brothers, Inc.

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Hammers (Electric)

Wodack Electric Tool Corp.

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Behlen Manufacturing Co.
Herman Nelson Corp.

Hoists (Gas, Electric, Diesel & Steam)

Clyde Iron Works
Construction Machinery Co.
Harnischfeger Corp.
Ingersoll-Rand Co.
Jaeger Machine Co.
McKiernan-Terry Corp.

Hoists (Hydraulic)

Anthony Co.

Hoists (Portable)

Ingersoll-Rand Co.

Hose (Air, Water, Steam, Suction)

United States Rubber Co.

Instruments

Pan-technics, Ltd.

Insurance (Automobile)

Central Surety & Ins. Corp.

Insurance (Casualty)

Central Surety & Ins. Corp.

Insurance (Compensation)

Central Surety & Ins. Corp.

Insurance (Liability)

Central Surety & Ins. Corp.

Joists (Steel)

Ceco Steel Products Corp.
Macomber, Inc.

Kettles, Heating (Asphalt & Tar)

White Mfg. Co.

Letters (Cast and Formed Non-Ferrous Metal)

Newman Brothers, Inc.

Loaders (Portable)

Link-Belt Co.

Longspans

Macomber, Inc.

Lubricants

Gulf Oil Corp.

Lumber (Fireproof)

Fox Bros. Mfg. Co.

Menders (Hose)

Dixon Valve & Coupling Co.
Ingersoll-Rand Co.

Millwork

Fox Bros. Mfg. Co.

Mixers (Truck)

Blaw-Knox Division
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Jaeger Machine Co.



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Butler Bin Co.
Chain Belt Co.
Jaeger Machine Co.
C. S. Johnson Co.

Moldboards

Shunk Manufacturing Co.

Mortar (Masonry)

Lehigh Portland Cement Co.

Nipples (Hose)

Dixon Valve & Coupling Co.

Partitions (Steel, Load-Bearing)

Masonber, Inc.

Paving Machinery

Chain Belt Co.
Foote Co.

Pile Drivers

Austin-Western Co.
Bucyrus-Erie Co.
Harnischfeger Corp.
Ingersoll-Rand Co.
Link-Belt Co.
McKernan-Terry Corp.
Northwest Engineering Co.

Pile Shells

Armed Drainage & Metal Products

Piling (Corrugated Steel Sheet)

Armed Drainage & Metal Products
Came Cor-Plate Piling Co.
L. B. Foster Co.

Piling (Steel)

Allied Structural Steel Cos.
American Bridge Co.
Armed Drainage & Metal Products
Bethlehem Steel Co.
Came Cor-Plate Piling Co.
Clinton Bridge Works
L. B. Foster Co.
Gage Structural Steel Co.
Inland Steel Co.
Midland Structural Steel Co.

Pipe

L. B. Foster Co.
Laclede Steel Co.

Pipe (Corrugated Metal)

Armed Drainage & Metal Products

Plywood (Concrete Form)

Carl Besch Co.
Douglas Fir Plywood Assn.

Pumps (Centrifugal, Self-Priming)

Barnes Mfg. Co.
Chain Belt Co.
Complete Machinery & Equipment Co.
Construction Machinery Co.
Gorman-Rupp Co.
Griffin Wellpoint Corp.
Ingersoll-Rand Co.
Jaeger Machine Co.

Pumps (Combination)

Griffin Wellpoint Corp.

Pumps (Diaphragm)

Barnes Mfg. Co.
Construction Machinery Co.
Gorman-Rupp Co.
Jaeger Machine Co.

Pumps (Jetting)

Complete Machinery & Equipment Co.
Griffin Wellpoint Corp.

Pumps (Portable)

Barnes Mfg. Co.
C.H. & E. Mfg. Co.
Carver Pump Co.
Chain Belt Co.
Complete Machinery & Equipment Co.
Construction Machinery Co.
Gorman-Rupp Co.
Griffin Wellpoint Corp.
Ingersoll-Rand Co.
Jaeger Machine Co.
Marlow Pumps
Novo Engine Co.
Rice Pump & Machine Co.
Sterling Machinery Corp.
Worthington Pump & Machinery Corp.

Pumps (Road)

Construction Machinery Co.
Gorman-Rupp Co.
Ingersoll-Rand Co.
Jaeger Machine Co.

Pumps (Sand & Dredging)

Bucyrus-Erie Co.
Elliott Machine Corp.

Quantity Surveyors

H. A. Sloane Associates

Quarry Plants

Austin-Western Co.
Iowa Mfg. Co.
Universal Engineering Corp.

Ragglers (Mortar Joint, Electric)

Wodack Electric Tool Corp.

Rail

L. B. Foster Co.

Railings (Tubular, Extruded and

Wrought Brass, Bronze, Aluminum, Stainless Steel)
Newman Brothers, Inc.

Railway Equipment & Supplies

Wisconsin Motor Corp.

Railway Track Material

Pettibone Mulliken Corp.

Reinforced Concrete

Smooth Ceilings System

Reinforcement Accessories

Economy Forming Corp.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.
Williams Form Engineering Corp.



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BUYERS' GUIDE

Reinforcing Steel

American Bridge Co.
Bethlehem Steel Co.
Ceco Steel Products Corp.
Inland Steel Co.
Laclede Steel Co.
Joseph T. Ryerson & Son, Inc.
Truscon Steel Co.

Road Maintainers

J. D. Adams Mfg. Co.
Austin-Western Co.
Baker Mfg. Co.
Caterpillar Tractor Co.
Foote Co.
Galion Iron Works & Mfg. Co.
Heltzel Steel Form & Iron Co.

Rock Bits (Removable, Carbide Insert)

Ingersoll-Rand Co.
Timken Roller Bearing Co.

Roller Bearings

Timken Roller Bearing Co.

Rollers (Road)

Austin-Western Co.
Buffalo-Springfield Roller Co.
Galion Iron Works & Mfg. Co.

Rollers (Sheepsfoot)

J. D. Adams Mfg. Co.
Baker Mfg. Co.
Blaw-Knox Division
Bucyrus-Erie Co.
Euclid Road Machinery Co.
R. G. LeTourneau, Inc.

Roof Deck (Steel)

Allied Structural Steel Cos.
Ceco Steel Products Corp.
Clinton Bridge Works
Gage Structural Steel Co.
Midland Structural Steel Co.

Roofing

Truscon Steel Co.

Rope (Wire)

L. B. Foster Co.
A. Leschen & Sons Rope Co.
R. G. LeTourneau, Inc.
Joseph T. Ryerson & Son, Inc.

Sanders (Belt)

Skilsaw, Inc.

Sanders (Disc)

Skilsaw, Inc.

Sash (Metal & Ventilating)

Detroit Steel Products Co.
Truscon Steel Co.

Sash (Wood)

Fox Bros. Mfg. Co.

Saws (Chain & Portable)

Skilsaw, Inc.

Scales (Truck, Wheelbarrow, Batching)

Winslow Scale Co.

Scarifiers

J. D. Adams Mfg. Co.
Austin-Western Co.
Baker Mfg. Co.

Scrapers (Cable-Operated)

Bucyrus-Erie Co.
Caterpillar Tractor Co.

Scrapers (Drag & Wheeled)

J. D. Adams Mfg. Co.
Austin-Western Co.
Galion Iron Works & Mfg. Co.
R. G. LeTourneau, Inc.

Screens (Sand, Gravel & Coal)

Iowa Mfg. Co.
Link-Belt Co.

Shores

Synsom Clamp & Mfg. Co.

Shovels (Power)

Austin-Western Co.
Bucyrus-Erie Co.
Harnischfeger Corp.
Koehring Co.
Link-Belt Speeder Corp.
Michigan Power Shovel Co.
Northwest Engineering Co.

Shovels (Power, Midget Hydraulic)

Butler Bin Co.

Shutters (Fire, Labeled)

Kinnear Mfg. Co.

Snow Plow Blades

Shunk Manufacturing Co.

Soil Stabilizers

Harnischfeger Corp.

Spreaders (Bituminous Surface)

Foote Co.
Galion Iron Works & Mfg. Co.
Universal Engineering Corp.

Stabilizer Plants

Iowa Mfg. Co.

Steel Highway Forms

Heltzel Steel Form & Iron Co.

Steel (Structural)

Allied Structural Steel Cos.
American Bridge Co.
Bethlehem Steel Co.
Clinton Bridge Works
Gage Structural Steel Co.
Inland Steel Co.
Macomber, Inc.
Midland Structural Steel Co.
Joseph T. Ryerson & Son, Inc.
Smooth Ceilings System
Truscon Steel Co.

Surety Bonds

American Surety Co.
Central Surety & Ins. Corp.

Tablets (Cast Bronze and Aluminum)

Newman Brothers, Inc.

Tanks

American Bridge Co.

Tires

Goodyear Tire & Rubber Co.
United States Rubber Co.

Tools (Pneumatic, Electric)

Allis-Chalmers Co.
Ingersoll-Rand Co.

Tools (Powder-Actuated)

Stemco Corp.

Torches (Kerosene)

White Mfg. Co.

Track Accessories

L. B. Foster Co.

Tractors

Allis-Chalmers Tractor Div.
Caterpillar Tractor Co.
International Harvester Co.
Oliver Corp. Industrial Div.

Trailbuilders

Baker Mfg. Co.
Bucyrus-Erie Co.

Trailers (Dump & Crawler Wheel)

Euclid Road Machinery Co.
R. G. LeTourneau, Inc.

Trailers (Heavy Equipment)

Rogers Bros. Corp.
Wellman Engineering Co.

Trenchers

Cleveland Trencher Co.
Harnischfeger Corp.
Michigan Power Shovel Co.
Parsons Co.

Truck Axles

Eaton Mfg. Co., Axle Division

Truck Shovels

Harnischfeger Corp.

Trucks (Motor)

Euclid Road Machinery Co.
International Harvester Co.
Mack Trucks, Inc.

Trusses (Steel)

Macomber, Inc.

Tunnel Liner Plates

Armed Drainage & Metal Products

Valves (Air, Self-Heating)

Dixon Valve & Coupling Co.

Ventilators (Portable)

Herman Nelson Corp.

Wagon Drills

Ingersoll-Rand Co.

Wagons (Dump)

J. D. Adams Mfg. Co.
Austin-Western Co.
Caterpillar Tractor Co.
Euclid Road Machinery Co.
R. G. LeTourneau, Inc.

Washing Plants

Austin-Western Co.
Iowa Mfg. Co.
Link Belt Co.
Universal Engineering Corp.

Wellpoint Systems

Complete Machinery & Equipment Co.
Griffin Wellpoint Corp.

Whirlleys

Clyde Iron Works

Winches

Clyde Iron Works

Windows (Metal & Hollow Metal)

Ceco Steel Products Corp.
Detroit Steel Products Co.
Truscon Steel Co.

Windows (Ventilating)

Detroit Steel Products Co.
Truscon Steel Co.

Windows (Wood)

Fox Bros. Mfg. Co.

Wire Mesh

Laclede Steel Co.

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MANUFACTURERS LISTED IN GUIDE

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Warren, Ohio

Ingersoll-Rand Co.
11 Broadway
New York 4, N. Y.

Inland Steel Co.
38 S. Dearborn St.
Chicago 3, Ill.

International Harvester Co.
180 N. Michigan Ave.
Chicago 3, Ill.

Iowa Mfg. Co.
Cedar Rapids, Iowa

Jaeger Machine Co.
528 Dublin Ave.
Columbus 16, Ohio

C. S. Johnson Co.
Champaign, Ill.

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St. Louis 12, Mo.

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Peoria, Ill.

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Empire State Bldg.
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Marlow Pumps
Ridgewood, N. J.

Martin Steel Products Corp.
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Field Bldg., 135 S. LaSalle St.
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Nova Engine Co.
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19300 Enclid Ave.
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Owen Bucker Co.
7750 Breakwater Ave.
Cleveland 2, Ohio

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Encinitas, Calif.

Parsons Co.
Newton, Iowa

Pettibone Mulliken Corp.
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Bucyrus, Ohio

Siskcraft Co.
205 W. Wacker Drive
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Skilsaw, Inc.
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Chicago 30, Ill.

H. A. Sloane Associates
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T. L. Smith Co.
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Smooth Ceilings System
802 Metropolitan Life Bldg.
Minneapolis 1, Minn.

Stemco Corp.
Cleveland 16 (Rocky River) Ohio

Sterling Machinery Corp.
405 Southwest Blvd.
Kansas City 10, Mo.

Symons Clamp & Mfg. Co.
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Chicago 39, Ill.

Timken Roller Bearing Co.
Canton 6, Ohio

Trinity White, General Portland Cement Co.
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Chicago 3, Ill.

Truscon Steel Co.
Youngstown 1, Ohio

United States Rubber Co.
Rockefeller Center
New York 20, N. Y.

Universal Atlas Cement Co.
Chrysler Bldg.
New York 17, N. Y.

Universal Engineering Corp.
331 8th St., N. W.
Cedar Rapids, Iowa

Universal Form Clamp Co.
1242 N. Kostner
Chicago 31, Ill.

Wellman Engineering Co.
7015 Central Ave.
Cleveland 4, Ohio

White Mfg. Co.
Elkhart, Ind.

Williams Form Engineering Corp.
Box 925, Madison Square Station
Grand Rapids 7, Mich.

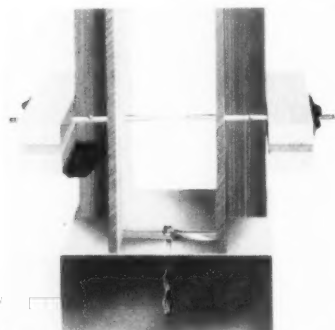
Winslow Scale Co.
Terre Haute, Ind.

Wisconsin Motor Corp.
Milwaukee 14, Wis.

Wodack Electric Tool Corp.
4627 W. Huron St.
Chicago 44, Ill.

Worthington Pump & Machinery Corp.
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Dunellen, N. J.



Williams Clamps showing nail in stud spacing—waler support—and form aligner.

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"Vibra-Lock" Form Clamps

"Super-Hi" Strength Tie Rods, Pig-tailed Anchors and Couplings

"Anchor Grip" Form Aligners

"Non-Slip" Waler Supports

For complete information write for our catalogue
"Form Engineering #1600"

WILLIAMS FORM ENGINEERING CORP.

Box 925 Madison Square Station

Grand Rapids 7, Mich.



Waler supports.



High Tensile Tie-Rod Couplings.

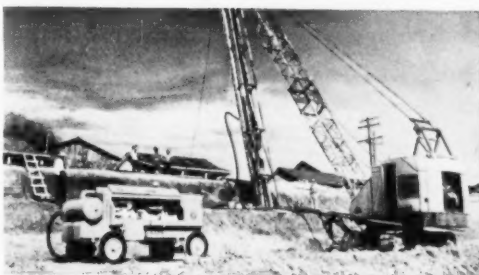
JAEGER "new standard" compressor sizes go to 600 cfm - to boost production, cut job costs

Line Cutting an Extra Foot a Minute — 25% Direct Increase: To line-cut pavement before removing car tracks from San Francisco's busy Market Street, Eaton & Smith mounted a row of 3" automatic feed drifter drills in quick adjusting saddles along side

of truck. A Jaeger Model 600 in place of "old standard" 500 ft. compressor, enabled them to add a fifth drifter, drill two 5-hole settings interspaced at 6" in one minute, and advance 5 ft. instead of 4 each time they moved ahead. That's cost cutting.



4 Days' Drilling in 3, Speeds Big Excavation: On a 1,600,000 yd. job of 60% limestone and sandstone on U. S. 22 near Pittsburgh, Ralph Myers replaced his 500 ft. compressor with a Jaeger 600, immediately stepped the working pressure behind 2 heavy wagon drills from 70 up to 90 lbs., increased daily footage 35% to 40% and broke a bottleneck that had been delaying all job progress.



15,000 Lb. Pile Hammer Needs 565 Ft. of Air — and Gets It: This big hammer is like 2 heavy wagon drills in that it needs more than 500 ft. of air to operate at full pressure and efficiency. Killian House, at San Antonio, get top production from their heavy equipment with a Jaeger 600 which meets the requirement of 565 cfm at 100 lbs. pressure with plenty of air to spare.

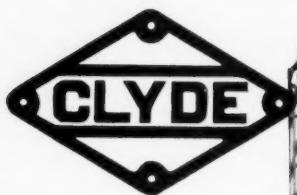
These "New Standard" sizes insure the steady 90 lbs. pressure at which tools do 30% to 40% faster work: • **MODEL 73** runs a heavy breaker at 90 lbs. • **MODEL 125** runs 2 heavy or 3 medium breakers or heavy rock drill at 90 lbs. • **MODEL 185** runs 3 heavy duty breakers, 2 medium or 1 heavy rock drill at 90 lbs. • **MODEL 250** runs medium wagon drill or an additional hand held tool of any size at 90 lbs. • **MODEL 365** runs 2 medium or 1 heavy wagon drill plus hand held drill at 90 lbs.

THE JAEGER MACHINE CO., Columbus 16, Ohio



JAEGER engineered equipment

COMPRESSORS • DIAGONAL SCREED FINISHERS
 SCREW SPREADERS • BITUMINOUS PAVERS



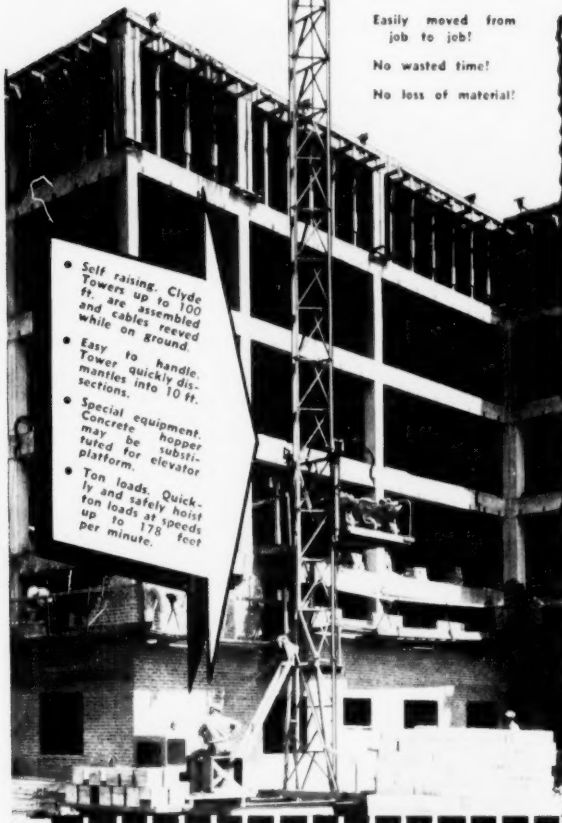
Portable* BUILDERS TOWERS

many
SAVES[^] COSTLY MAN-HOURS

Easily moved from
job to job!

No wasted time!

No loss of material!



- Self raising. Clyde Towers up to 100 ft. are assembled and cables reeved while on ground.
- Easy to handle. Tower quickly disassembles into 10 ft. sections.
- Special equipment. Concrete hopper may be substituted for elevator platform.
- Ton loads. Quickly and safely hoist up to 17 1/2 tons per minute.

Cut Costs!

Speed Materials Handling!

*Clyde Portable Builders Towers offer many money-saving and time-saving advantages. Time saved in the erection and dismantling, as compared to other type elevators, effects large savings **measurable in cold cash!** Clyde Towers are built for long life, dependable performance, and eliminate maintenance and replacement costs of timber tower. But more than that, Clyde Portable Builders Tower are **safety engineered** to minimize construction job hazards. No acrobats or dare-devils are needed to erect a Clyde... it's assembled on the ground and raised into position with its own hoist!

For safety, for convenience, for large savings measurable in cold cash, get a Clyde! **You can expect, AND GET, more** when you buy a Clyde portable builders tower.

Check these Clyde Features

- ✓ Safety brake automatically locks load in case of cable failure.
- ✓ A 2,000 lb. capacity tower derrick available as extra equipment.
- ✓ May be transported on trailer wheels or loaded on a truck.

*For Complete Facts
write for Bulletin A-11*



Tower hoist quickly and easily raises tower into position. No outside crane is needed. Clyde Portable Builders Towers are fast, safe, convenient to erect.



Tower is quickly and easily assembled, and cable reeved while tower is on ground. Only two men are required to handle and erect complete.



Tower is easily and quickly lowered and dismantled for transport. May be loaded on truck or towed on trailer wheels which attach to tower base.



CLYDE IRON WORKS, Inc.

DULUTH 1, MINNESOTA

Hoists • Derricks • Whirls • Builders Towers • Car Pullers • Handi-Cranes • Rollers •

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